1ST PRINTING— JL

SEGA®

HANG-ON

OWNER'S MANUAL



SEGA ENTERPRISES, LTD.

MANUAL NO. 420–5252

TABLE OF CONTENTS

SPECIFICATIONS

INSTALLATION SPACE	:	24.8 in. (63 cm) × 38.6 in. (98 cm)
HEIGHT	:	72.8 in. (185 cm)
POWER	:	185 W

NOTE

o Descriptions herein contained may be subject to improvement changes without notice.

INTRODUCTION OF THE OWNER'S MANUAL

SEGA ENTERPRISES, LTD., supported by its high electronic technology of LSIS, microprocessors, etc. and a wealth of experience, has for more than 30 years been supplying various innovative and popular game machines to the world market. This OWNER'S manual is intended to provide detailed comments together with all the necessary information covering the operation in general of electronic assemblies, electromechanicals, servicing control, spare parts, etc. as regards the HANG·ON, a new SEGA product. The manual is intended for those who have knowledge of electricity and technical expertise especially in ICs, CRTs, microprocessors, etc. Carefully read so as to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstance touch the interior system.

1. HANDLING PRECAUTIONS

When installing or inspecting, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.

- o Be sure to turn the power off before working on the machine.
- o To insert or pull out the plug quickly is dangerous.
- o It is necessary to make sure that the power cord or the grounding wire is not exposed on the road, etc. in a manner so as to be dangerous. Make sure that grounding connections are made safely at the position where so specified.
- o Do not use any fuse that does not meet the specified rating.
- o Make complete connections for the IC board and other connecters. Insufficient insertion is very dangerous.

Also, for the IC board circuit inspections, only the logic tone is allowed. The use of a tester is not permitted so be careful in this regard. After confirming that there are no irregularities, turn the power ON.

2. PREVENTION OF COUNTERFEITING AND CONVERSION

LABELLING

To prevent counterfeits and conversions, the following labels are put on all the SEGA products. When handling such goods, be sure to confirm the labels. They are used to prevent illegal acts such as the unauthorized copying of the products and the printed circuit boards thereof or carrying on business by manufacturing similar merchandise or by converting, selling or using such products or printed circuit boards.

ORIGINAL SEAL

The following seal is put on the machines manufactured by SEGA.

LICENCE SEAL

The following seal is put on the kits, such as the printed circuit boards, of SEGA products.





COPYRIGHT NOTICE

This SEGA product has the copyright notice as follows:

© SEGA 1985

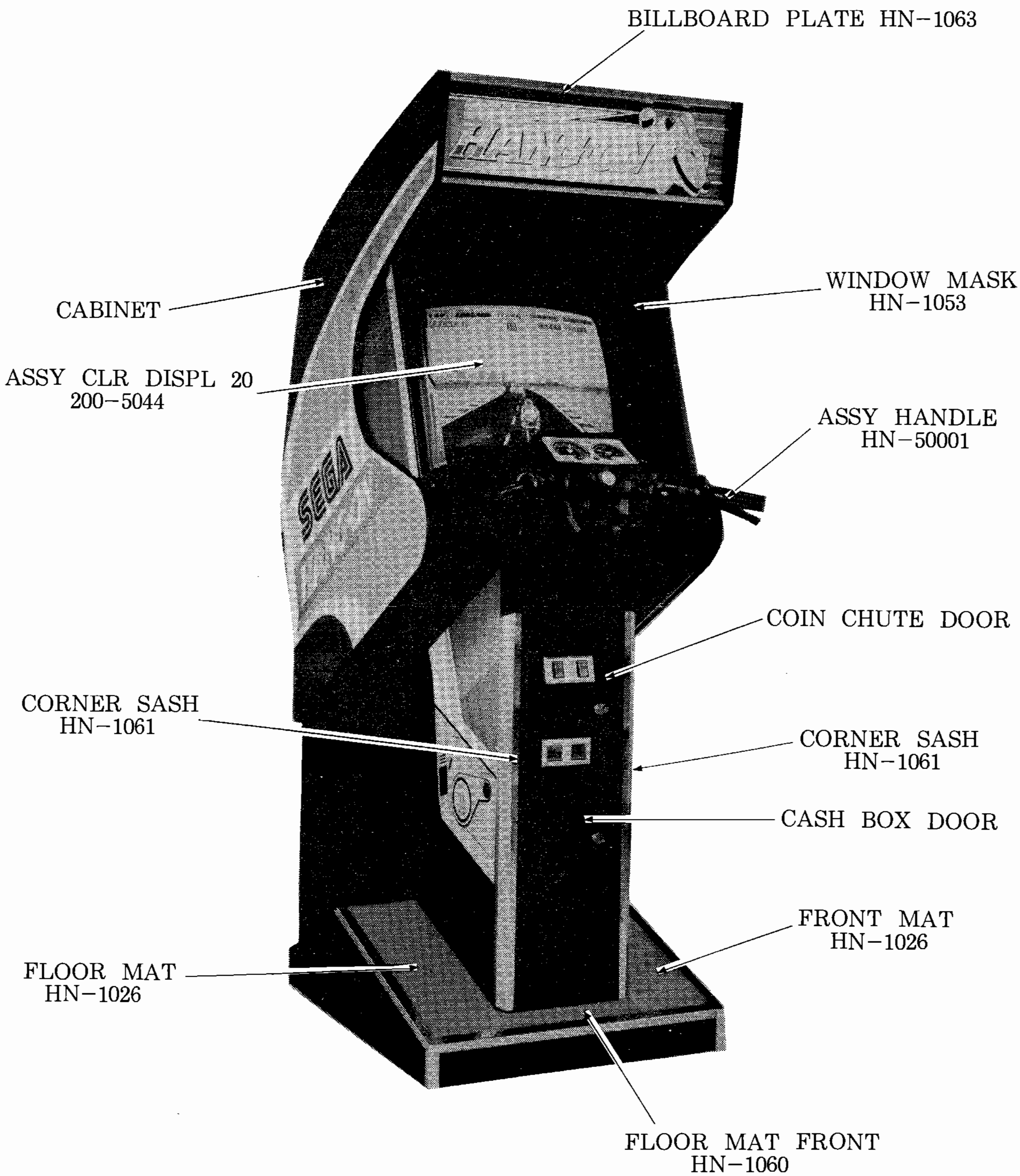
This signifies that this work was disclosed in 1985 and is the property of SEGA ENTERPRISES, LTD.

3. PRECAUTIONS CONCERNING THE PLACE OF INSTALLATION

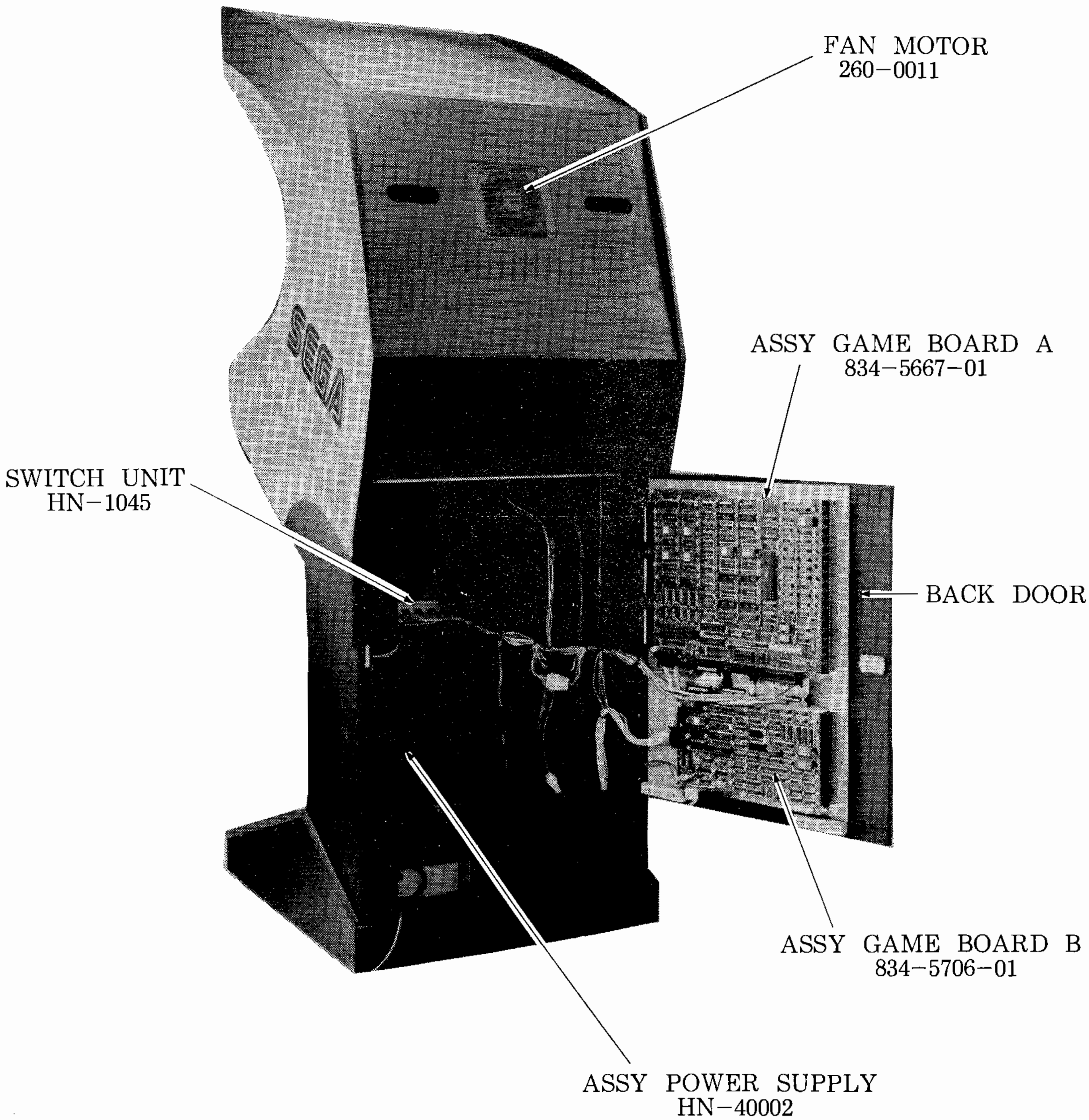
The HANG-ON is an indoor game machine. Absolutely do not install it outside. Even indoors, avoid installing in places mentioned below so as to ensure proper usage:

- o Places subject to rain or water leakage, or condensation due to humidity.
- o In the proximity of an indoor swimming pool and/or shower.
- o Places subject to direct sunlight.
- o Places subject to heat sources from heating units, etc., or hot air.
- o Vicinity of highly inflammable/volatile chemicals or hazardous matter.
- o Sloped surfaces.
- o Vicinity of anti-disaster facilities such us fire exits and fire extinguishers.
- o Places subject to any type of violent impact.
- o Dusty places.

4. EXTERIOR VIEW OF GAME ①

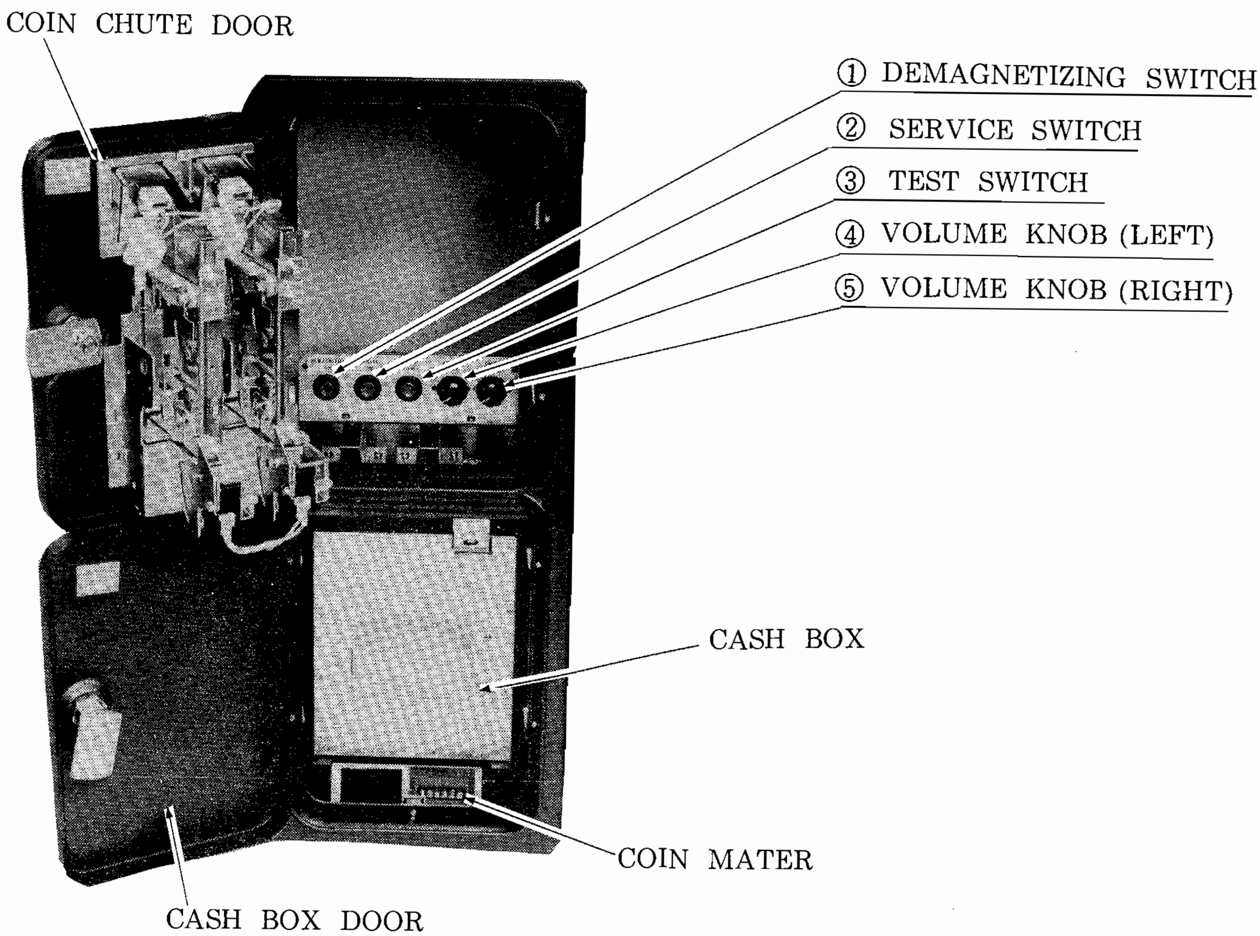


4. EXTERIOR VIEW OF GAME ②



5. ADJUSTMENT OF THE SERVICE SWITCH

The layout as shown below can be viewed by opening the coin chute door.



OPERATING INSTRUCTIONS

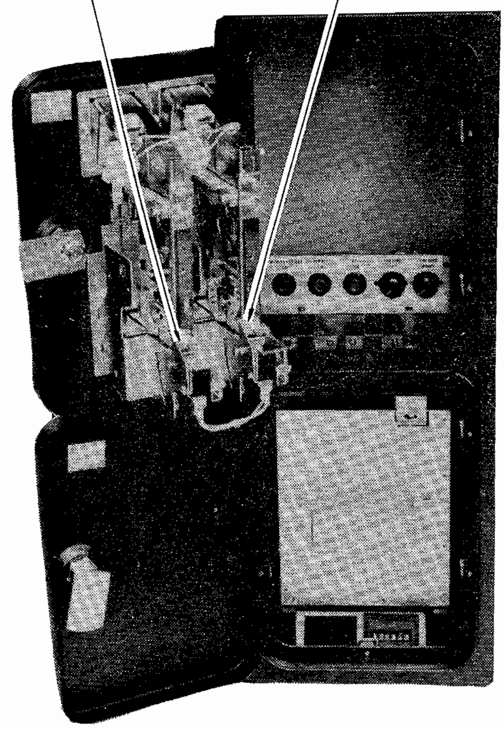
① DEMAGNETIZING SWITCH.....Used for removing the on-screen color unevenness.

② SERVICE SWITCH...........Used for the purpose of servicing and increasing the credits without registering on the meter (this allows you to check the game).

③ TEST SWITCH..............For operating this switch, see 13 . SELF-TESTING.

④⑤ VOLUME ADJUSTMENT.....The volume of the right/left speakers is separately adjusted (pay attention to the right/left volume balance).

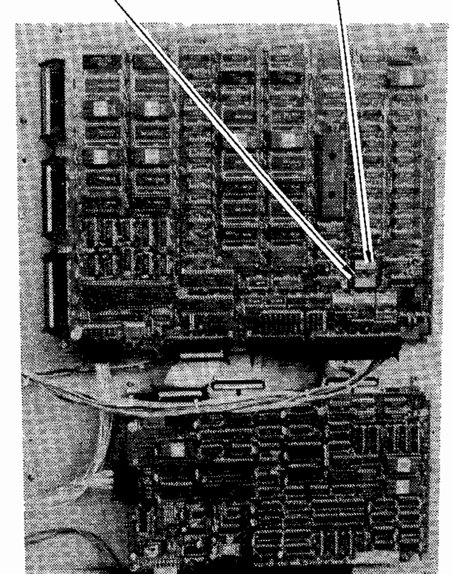
6. DIP SWITCH SETTING



Game Price Settings

DIP SW #1

OPTION	1	2	3	4	5	6	7	8
1 COIN 1 CREDIT	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN 2 CREDITS	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
1 COIN 3 CREDITS	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
1 COIN 4 CREDITS	ON	ON	OFF	OFF	ON	ON	OFF	OFF
1 COIN 5 CREDITS	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
1 COIN 6 CREDITS	ON	OFF	ON	OFF	ON	OFF	ON	OFF
2 COINS 1 CREDIT	OFF	ON	ON	OFF	OFF	ON	ON	OFF
3 COINS 1 CREDIT	ON	ON	ON	OFF	ON	ON	ON	OFF
4 COINS 1 CREDIT	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
2 COINS 3 CREDITS	ON	OFF	OFF	ON	ON	OFF	OFF	ON
2 COINS 1 CREDIT 4 COINS 2 CREDITS 5 COINS 3 CREDITS 6 COINS 4 CREDITS	OFF	ON	OFF	ON	OFF	ON	OFF	ON
2 COINS 1 CREDIT 4 COINS 3 CREDITS	ON	ON	OFF	ON	ON	ON	OFF	ON
1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 4 CREDITS 5 COINS 6 CREDITS	OFF	OFF	ON	ON	OFF	OFF	ON	ON
1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 5 CREDITS	ON	OFF	ON	ON	ON	OFF	ON	ON
1 COIN 1 CREDIT 2 COINS 3 CREDITS	OFF	ON	ON	ON	OFF	ON	ON	ON
1 COIN 1 CREDIT	ON	ON	ON	ON	ON	ON	ON	ON
	COIN SW #1				COIN SW #2			



Game Option Settings

DIP SW #2

OPTION		1	2	3	4	5	6	7	8
ADVERTISE SOUND	OFF ON	OFF ON						OFF	
GAME DIFFICULTY	MEDIUM EASY HARD HARDEST		OFF ON OFF ON	OFF OFF ON ON					
TIME ADJUST.	EASY MEDIUM HARD HARDEST				OFF ON OFF ON	OFF OFF ON ON			
PLAY MUSIC	ON OFF						OFF ON		

DIP SWITCH

o For details concerning the difficulty level setting, see page 8 .

7. SETTING THE DIFFICULTY LEVEL FOR THE " UPRIGHT " TYPE

For the UPRIGHT type HANG-ON machine, the difficultness of the game can be set for 4 different levels by adjusting ①, the other cars' appearance frequency and ②, the game time, using DIP SWITCH No. 2 on the PC (printed circuit) board. Depending on the skills of the players, appropriate difficulty levels can be set as applicable. When shipping the machine, the difficulty levels for both the above-mentioned ① and ② are set for the * mark level.

① Other cars' appearance frequency (set by DIP SWITCHES 2 & 3)

SWITCH NO.		The other cars' appearance frequency	Difficulty level	
3	2			
OFF	OFF	————	MEDIUM	*←When shipping
OFF	ON	30% lower than MEDIUM	EASY	
ON	OFF	40% higher than MEDIUM	HARD	
ON	ON	80% higher than MEDIUM	HARDEST	

② Game time adjustment (set by DIP SWITCH 4 & 5)

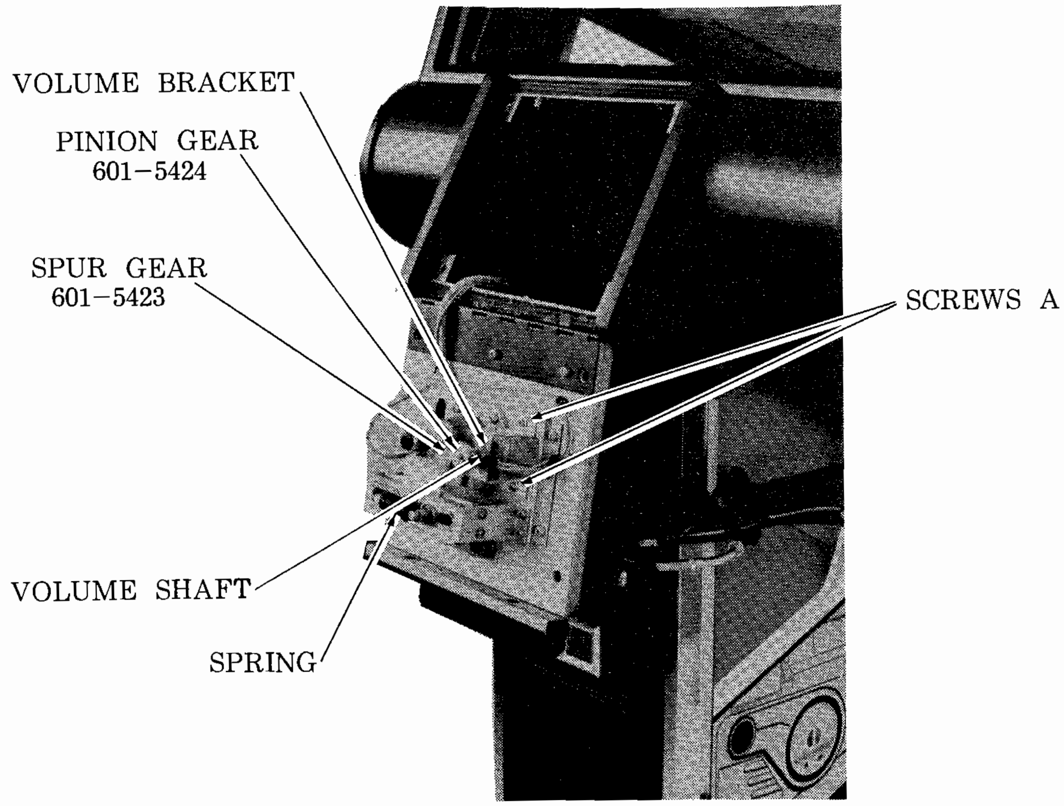
SWITCH NO.		Game time (seconds) per stage					Difficulty level	
5	4	1	2	3	4	5		
OFF	OFF	75	60	55	55	50	EASY	
OFF	ON	70	60	60	55	55	MEDIUM	*←When shipping
ON	OFF	65	60	55	60	55	HARD	
ON	ON	60	60	60	60	55	HARDEST	

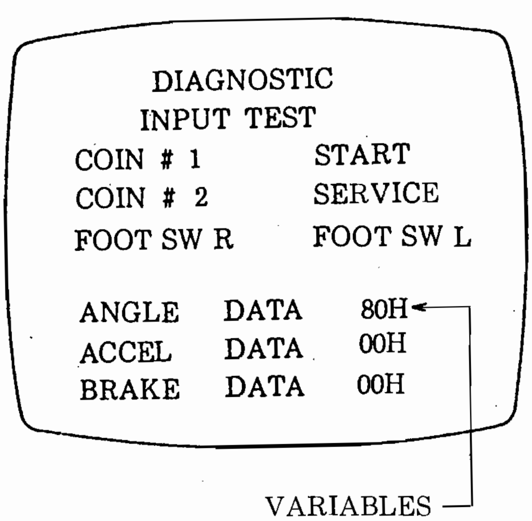
DETAILED EXAMPLES

DIP SW NO.				Difficulty level	
5	4	3	2		
OFF	OFF	OFF	ON	1	EASY ↑
OFF	ON	OFF	ON	2	
ON	OFF	OFF	ON	3	
ON	ON	OFF	ON	4	
OFF	OFF	OFF	OFF	5	
OFF	ON	OFF	OFF	6	※ When shipping
ON	OFF	OFF	OFF	7	
ON	ON	OFF	OFF	8	
OFF	OFF	ON	OFF	9	
OFF	ON	ON	OFF	10	
ON	OFF	ON	OFF	11	
ON	ON	ON	OFF	12	
OFF	OFF	ON	ON	13	
OFF	ON	ON	ON	14	
ON	OFF	ON	ON	15	↓
ON	ON	ON	ON	16	HARDEST

8. HANDLE'S CENTERING ADJUSTMENT

- o When the HANDLE is in a stationary position, display the following on the screen in the SELF-TEST mode:
- o At this time, if the variable value becomes 80H, it is considered normal.





ADJUSTING PROCEDURE

① The VOLUME BRACKET can be moved in the right and the left directions by releasing 2 SCREWS A which fasten it.

② Move the VOLUME BRACKET to the right to disengage the PINION GEAR and the SPUR GEAR. At this time, make adjustments by turning the VOLUME SHAFT in a manner so that the variable value falls within the allowable range.

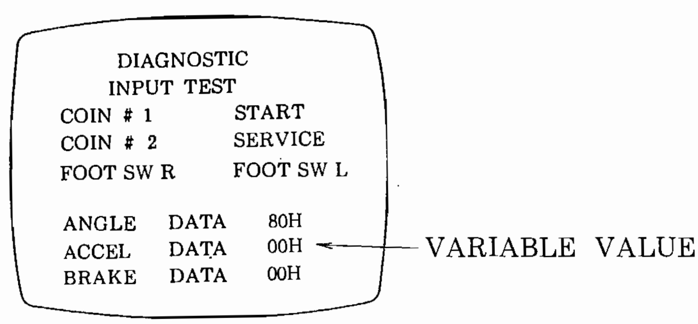
③ In the case where fine adjustments are necessary, slightly release the VOLUME BRACKET and then turn it in the applicable direction.

9. ADJUSTING THE ACCELERATOR / BRAKE

- o After replacing the ACCELERATOR/BRAKE WIRES, carry out the following test:
- o Display the following on the screen in the SELF-TEST MODE (see page 15).

ACCELERATOR

- o When the ACCELERATOR is returned to its original OFF position, make adjustment in a manner so that the variable value becomes OH.
  Allowable range: OH-4H
- o Make adjustment of the wire's length by using NUT C (see page 24).

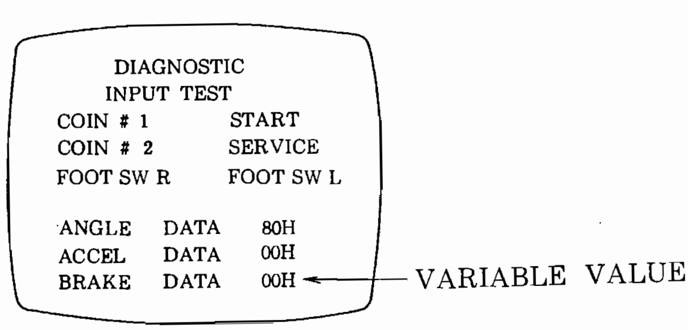


BRAKE

When the ACCELERATOR is returned to its original OFF position, make sure that the VARIABLE VALUE becomes OH.

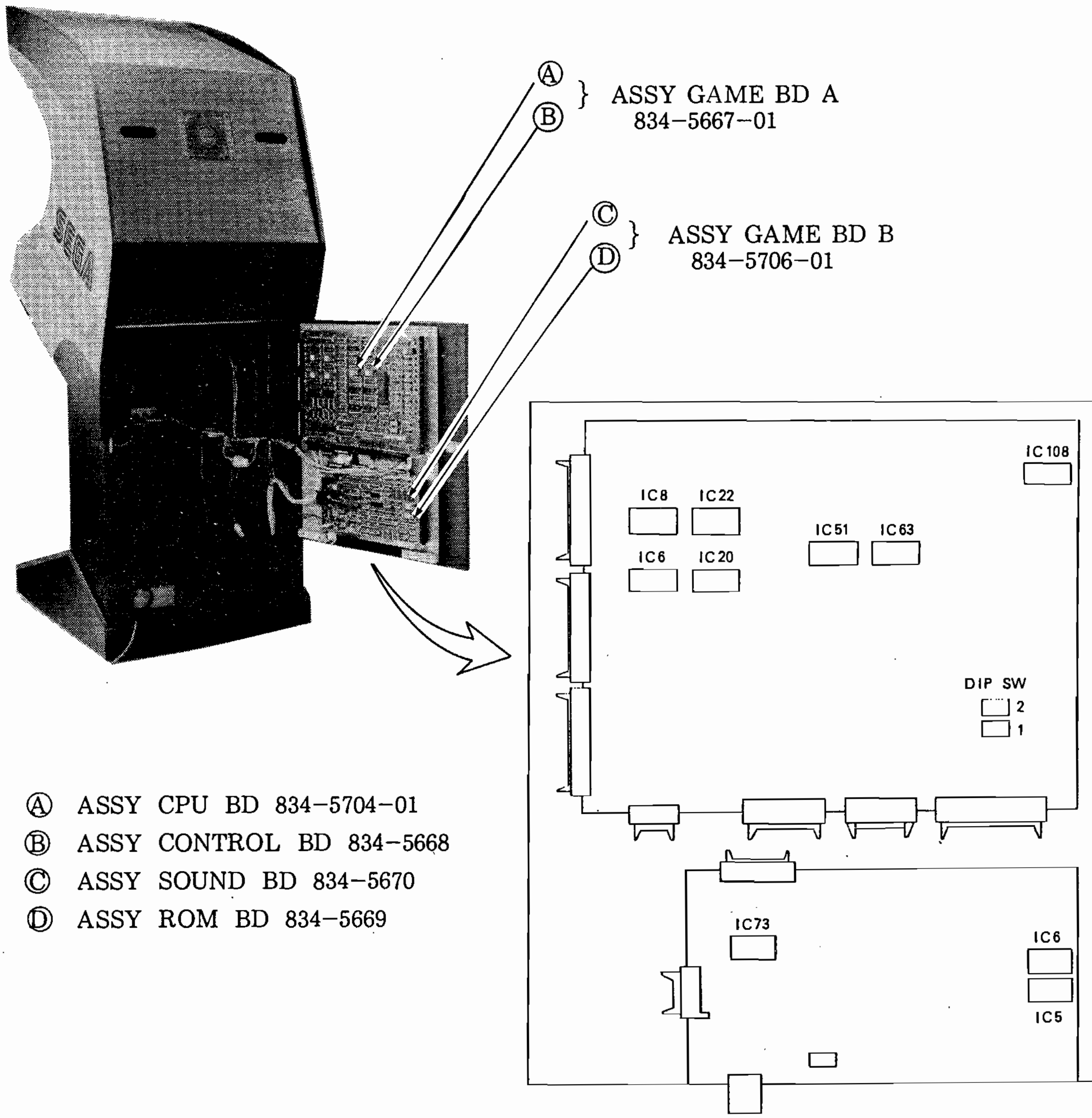
Allowable range: OH-4H

- o Adjust the wire's length by using NUT C (see page 24).



- o When the ACCELERTOR/BRAKE is moved the maximum distance, the PINION GEAR (see page 24). turns approximately 180 degrees.

10. EPROM LOCATION

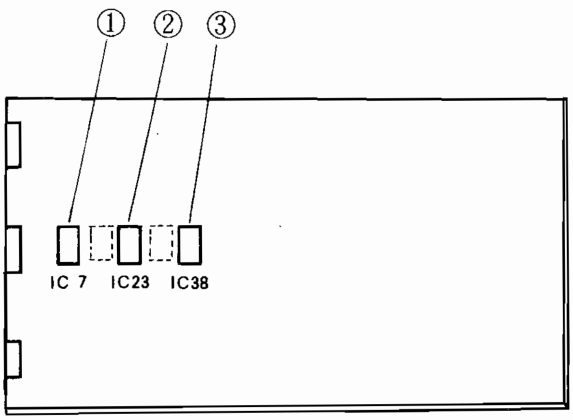


Ⓐ ASSY CPU BD 834-5704-01
Ⓑ ASSY CONTROL BD 834-5668
Ⓒ ASSY SOUND BD 834-5670
Ⓓ ASSY ROM BD 834-5669

Ⓐ ASSY CPU BD 834-5704-01

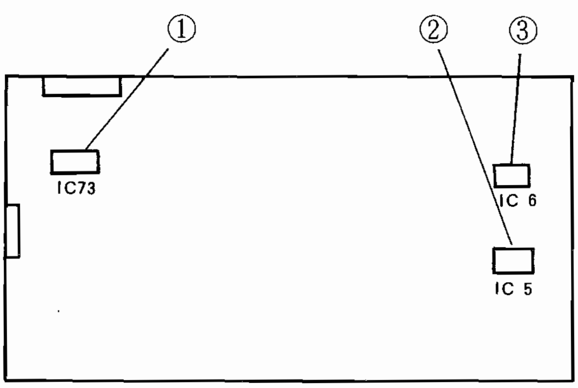
	IC LOCATIONS	NUMBERS	MAIN FUNCTIONS
1	IC 6	EPR-6915A	MAIN PROGRAM
2	IC 8	EPR-6916A	MAIN PROGRAM
3	IC 20	EPR-6917A	MAIN PROGRAM
4	IC 22	EPR-6918A	MAIN PROGRAM
5	IC 51	EPR-6919	SUB PROGRAM
6	IC 63	EPR-6920	SUB PROGRAM
7	IC 108	EPR-6840	ROAD CHARACTER

Ⓑ ASSY CONTROL BD 834−5668



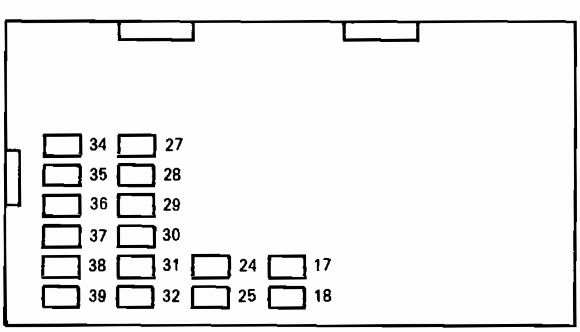
	IC locations	Numbers	Main functions
1	IC 7	EPR−6843	Letters & characters
2	IC 23	EPR−6842	
3	IC 38	EPR−6841	

Ⓒ ASSY SOUND BD 834−5670



	IC locations	Numbers	Main functions
1	IC 73	EPR−6833	Driving and other sounds
2	IC 5	EPR−6831	
3	IC 6	EPR−6832	

Ⓓ ASSY ROM BD 834−5669



	IC locations	Numbers	Main functions
1	IC 27	EPR−6819	Scenery figures
2	IC 34	EPR−6820	
3	IC 28	EPR−6821	
4	IC 35	EPR−6822	
5	IC 29	EPR−6823	
6	IC 36	EPR−6824	
7	IC 30	EPR−6825	
8	IC 37	EPR−6826	
9	IC 31	EPR−6827	
10	IC 38	EPR−6828	
11	IC 32	EPR−6829	
12	IC 39	EPR−6830	
13	IC 18	EPR−6845	
14	IC 25	EPR−6846	

11. SELF-TESTING

The main purpose of these tests are to check the operations of the game boards, to find the defects if any, to adjust the monitor colors properly, and to make sure the sounds are produced satisfactorily. It is also performed to indicate the assignments of the dip switches, check bookkeeping functions, etc.

KIND OF TESTS

1) Memory Test: To check the EPROM programs and the map area of the RAMs.

2) Input Test: To check the machine's inclining angle and to test the operation of the accelerator, brake, coin switches, etc.

3) Output Test: To test the operation of the start lamp.

4) Sound Test: To check the quality of the sounds produced by the PCB and the video disc, and adjust the balance of the speakers.

5) CRT Test: To check if the colors on the monitor are displayed correctly, and to adjust the linearity.

6) Dip Switch Assignment: To indicate each dip switch assignment.

7) Bookkeeping: To indicate information data on average score and average play time, etc.

1. TEST OPERATION

(1) Push the test switch and Fig. 1 will be shown on the screen.

(2) Select CONTINUE or INDIVIDUAL by using the START button.

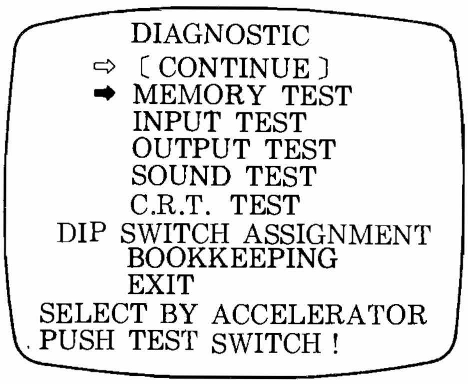


FIG. 1

(3) Move the accelerator to bring the arrow to the desired position.

SELECT BY ACCELERATOR PUSH TEST SWITCH (Select the desired test item by using the accelerator and push the test switch button.)

[CONTINUE]:

o Bring the arrow sign (by operating the control lever) to CONTINUE first, and move it to one of the tests to start. Push the TEST button, and the tests will be performed in order, one by one, starting from the test where the arrow was originally set to the EXIT.

o If the START button is pushed when the arrow is at CONTINUE, it will change to INDIVIDUAL. Pushing it again returns it to CONTINUE.

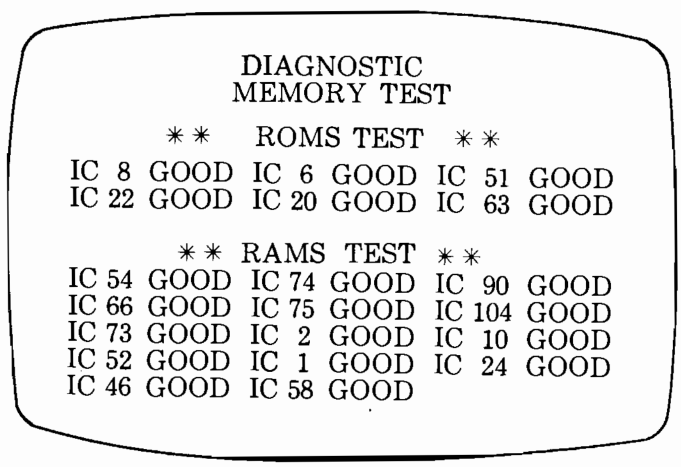
[INDIVIDUAL]:

o If the arrow is at INDIVIDUAL first and brought to a certain test which you want to conduct, only that test is performed by pushing the TEST button.

(4) When each test is finished in the case of CONTINUE, push the TEST button, and it will automatically go into the following test. If the TEST button is pushed in the case of INDIVIDUAL, FIG. 1 is shown. If you want to end the test mode at this time, bring the arrow to EXIT and push the TEST button, and it will return to the ADVERTISEMENT mode.

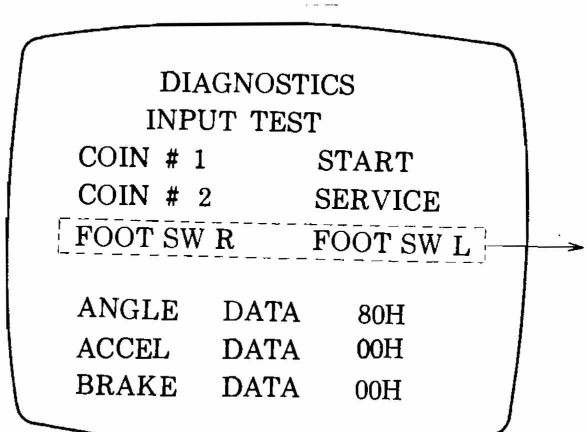
2. TEST ITEMS

(1) Memory Test:



Indication of "GOOD" following the IC No. means the IC is all right. Push the TEST button to proceed to the following test item.

(2) Input Test

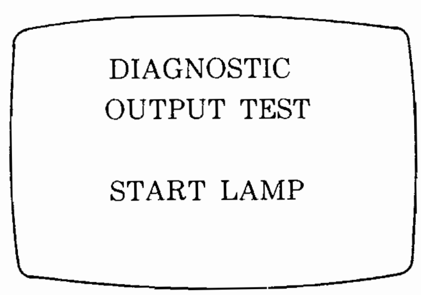


Applicable only for the RIDE ON type (not the UPRIGHT type).

1. Operate the dip switches. When "ON" is indicated at the right side of a certain tested item, the item is OK.
2. If the DATA value decreases when the bike is inclined to the right, or increases when it is inclined to the left the testing is OK (the data is indicated in the form of hexadecimal values). Make adjustment in a manner so that in the static condition the value shows 80H.
3. If the data value increases when the accelerator/brake is applied and the value ranges between "00H" and "4H" when it is returned to its original position, then the item test is OK.

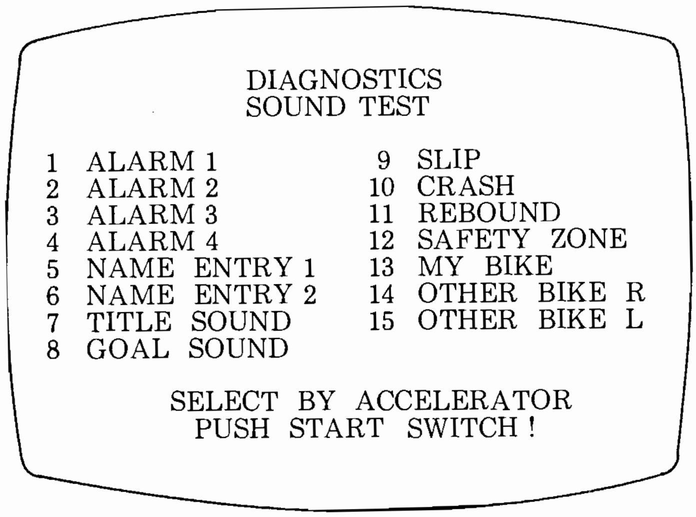
o When the test is ended, push the TEST button.

(3) Output Test



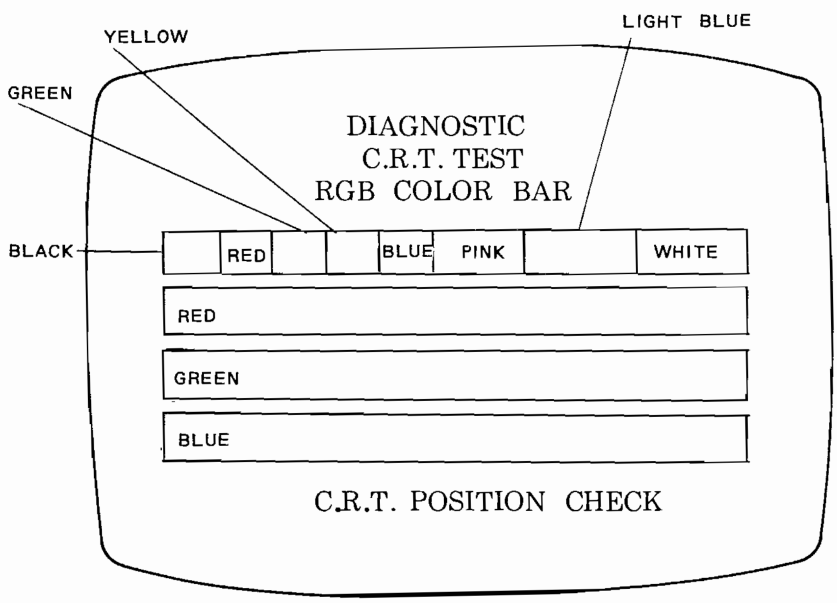
If the start LAMP lights up, it is functioning properly. Push the TEST button when the testing has been completed.

(4) Sound Test



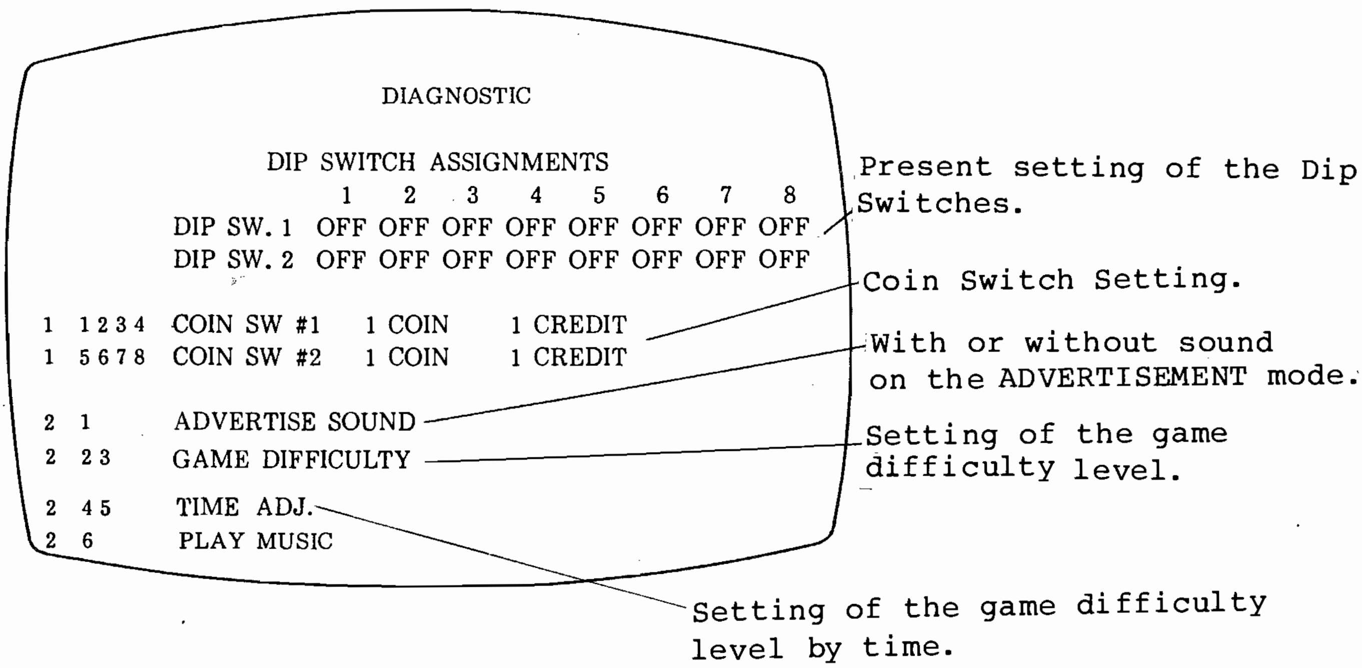
When the test has been completed, push the TEST button.

(5) C.R.T. TEST

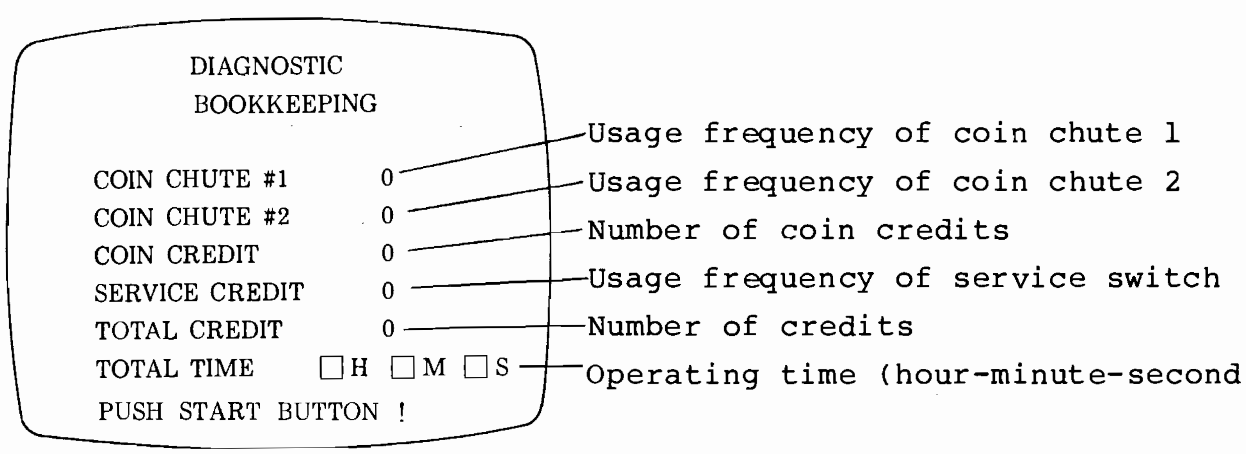


When the test has been completed, push the TEST button.

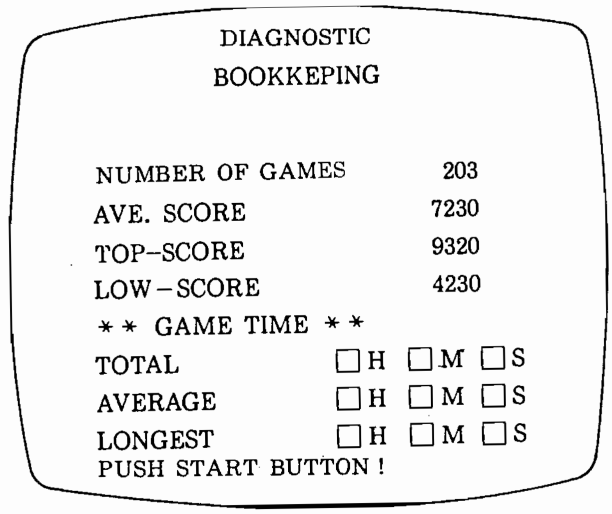
(6) DIP SWITCH ASSIGNMENTS



(7) Bookkeeping information



* Only the data that falls within the range of up to 999H 59M 59S can be memorized. The above screen indication is for testing. When the tests are finished, push the START button and the following will be shown:



Every time the TEST button is pressed, the bookkeping test display is repeated. When the test is finished, push the TEST button to end the test (in the case of "INDIVIDUAL", however, the test mode returns to Fig. 1 first).

NOTE: o Once the power source is turned OFF, all the bookkeeping data will be completely cleared.

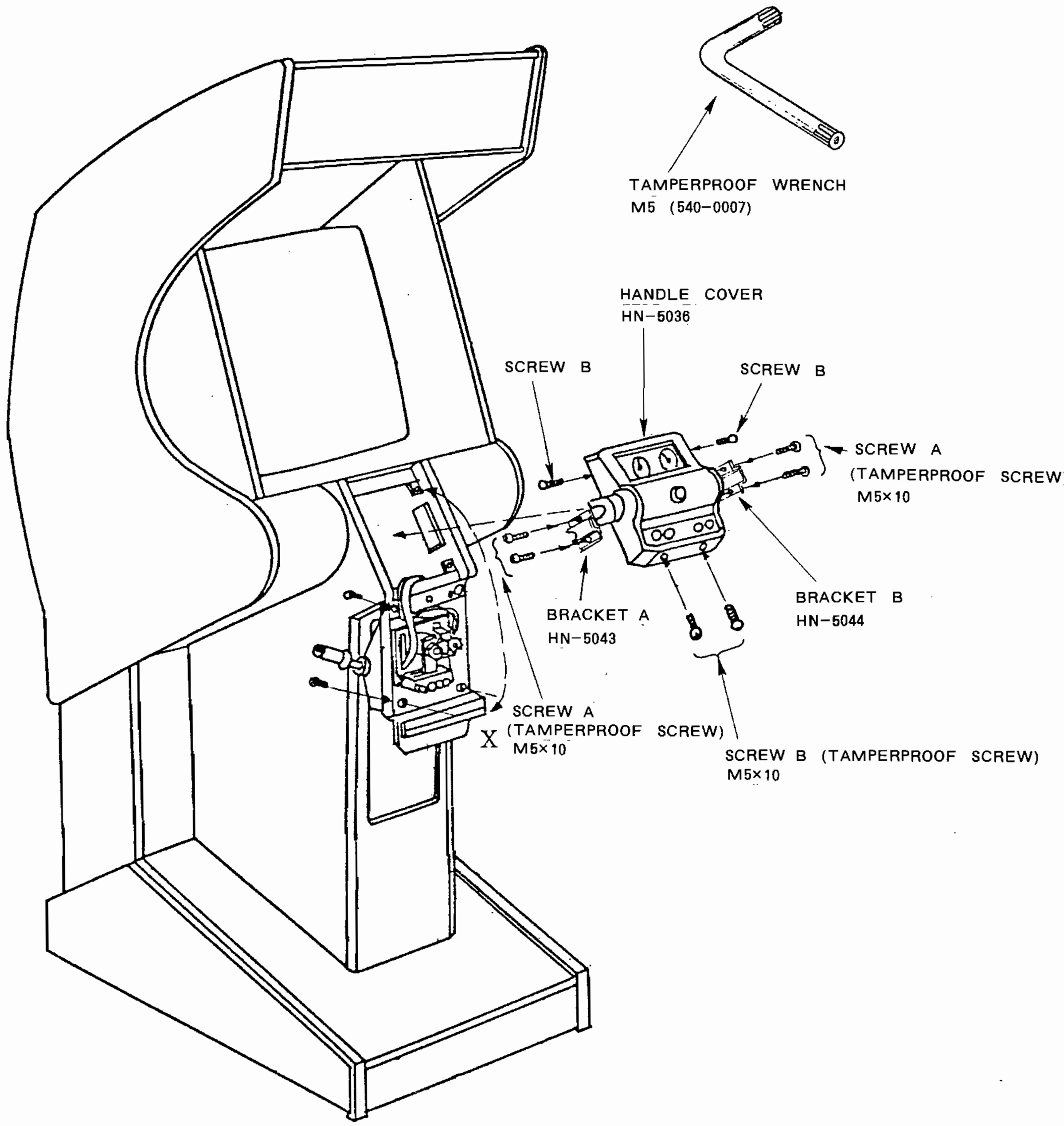
o If any data exceeds the bookkeeping function's capacity, "OVERFLOW" will be indicated on the screen and result in the stoppage of said function. At this time, turn the power OFF and turn it back ON again for reuse.

(8) EXIT

In the state as shown in Fig. 1, operate the handle to bring the arrow to EXIT and push the TEST button. The self-testing will then end and return to the ADERTISING mode.

12. REMOVING THE HANDLE COVER

1. When adjusting the ACCELERATOR, BRAKE, etc., remove the HANDLE COVER by using the following procedure:



DISASSEMBLING PROCEDURE

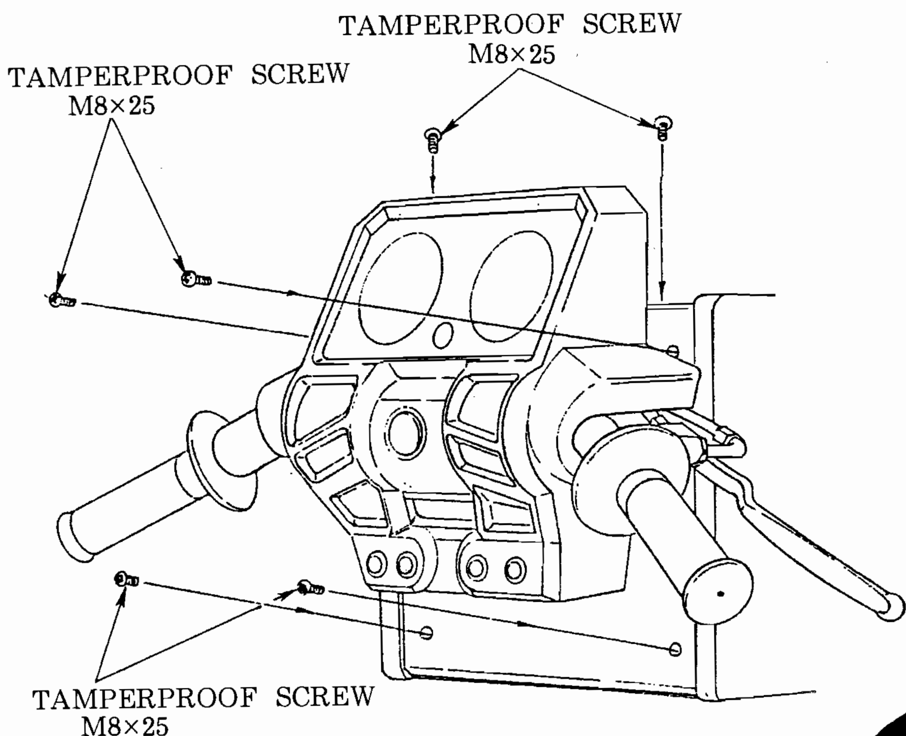
① Remove 4 SCREWS A which fasten BRACKET A and BRACKET B by using the TAMPERPROOF WRENCH (M5).

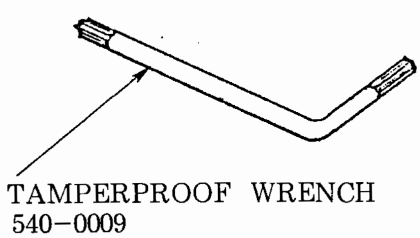
② Remove 4 SCREWS B which fasten the HANDLE COVER by using the TAMPERPROOF WRENCH (M5).

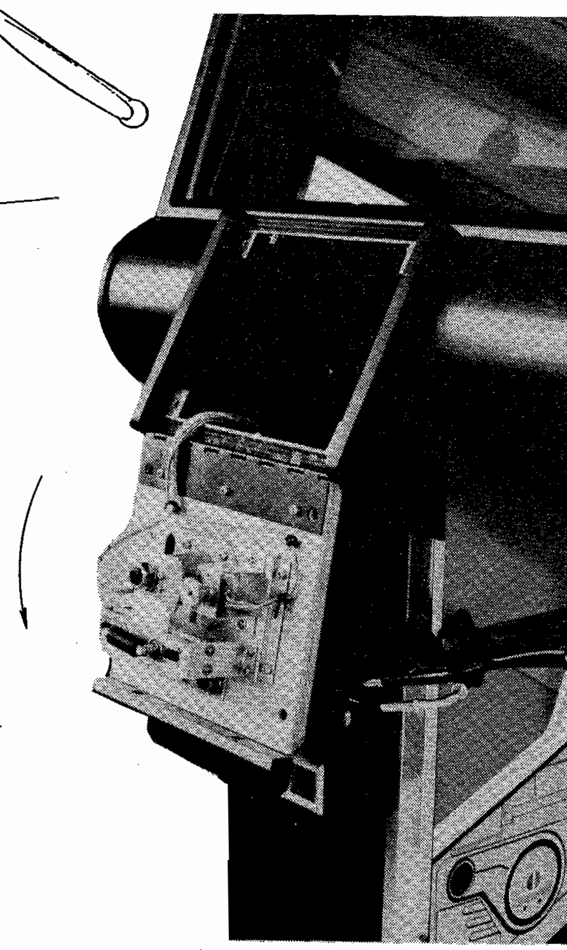
③ The HANDLE COVER can be detached from the HANDLE UNIT in accordance with the above procedures ① and ②. It is completely removable from the MAIN CABINET by pulling out the CONNECTOR (orange, 4P).

13. REMOVING THE HANDLE UNIT

o When adjusting the ACCELERATOR VOLUME and BRAKE VOLUME, remove the HANDLE UNIT by using the following procedure:





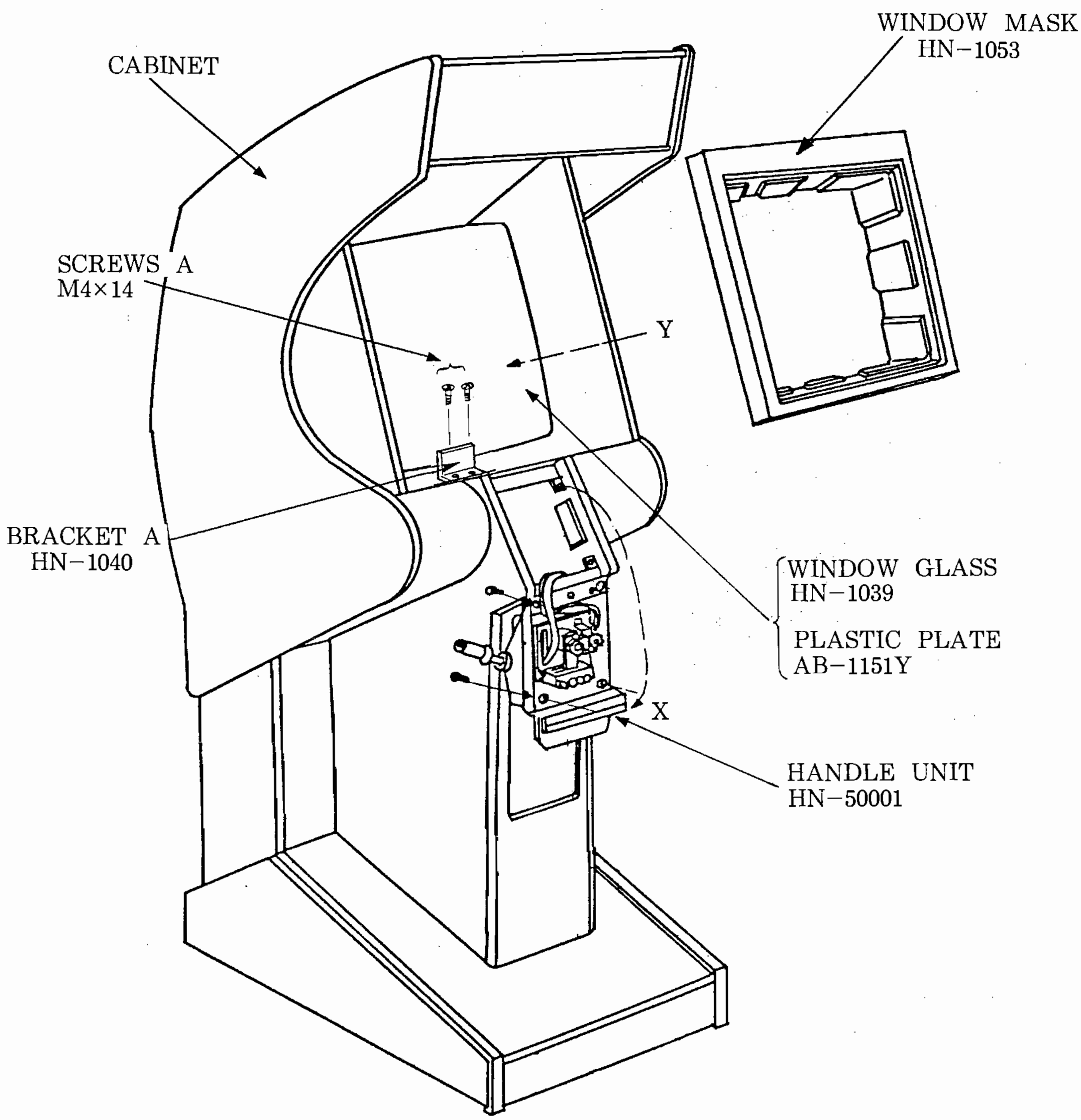


DISASSEMBLING PROCEDURE

For the adjustment of the ACCELERATOR/BRAKE volumes, take off the 6 TAMPERPROOF SCREWS by using the TAMPERPROOF WRENCH and remove the HANDLE UNIT as shown above. Refer to the separate item, ADJUSTING THE ACCELERATOR/BRAKE VOLUMES.

14. REMOVING THE WINDOW MASK

o When cleaning the monitor screen, the back of the WINDOW GLASS, the PLASTIC PLATE, etc., remove the WINDOW MASK from the CABINET by using the following procedure:

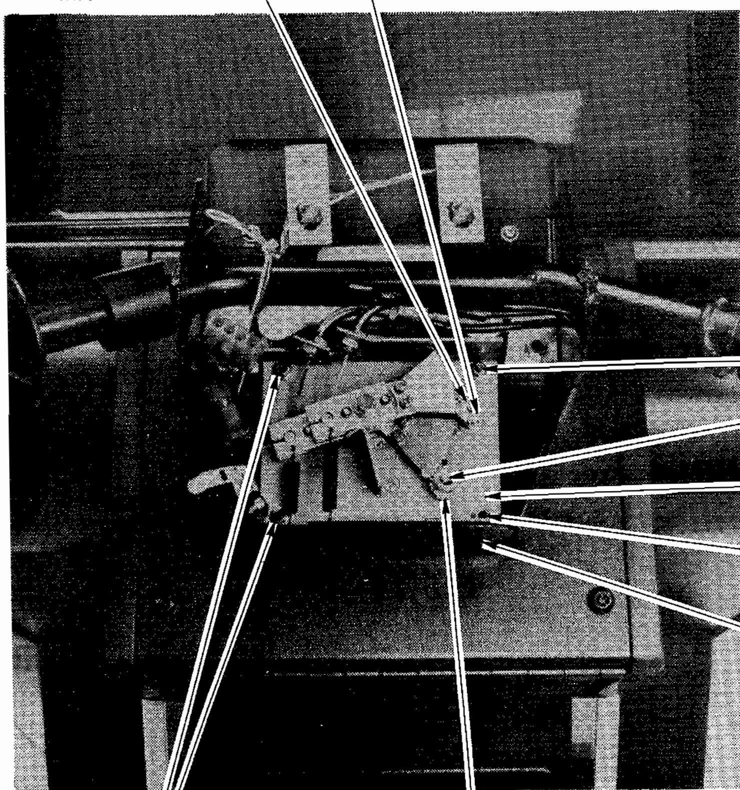


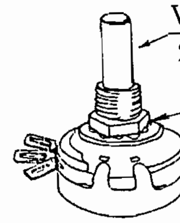
PROCEDURE

① Refer to REMOVING THE HANDLE UNIT (page 21).
The HANDLE UNIT can be opened in the direction of X and then the WINDOW MASK removed in the direction of Y.

② Remove BRACKET A which fastens the WINDOW GLASS by taking off 2 SCREWS A. In the above procedure, the WINDOW GLASS and the PLASTIC PLATE can be removed for cleaning from the CABINET.

15. REPLACING THE ACCELERATOR / BRAKE VOLUME CONTROLS

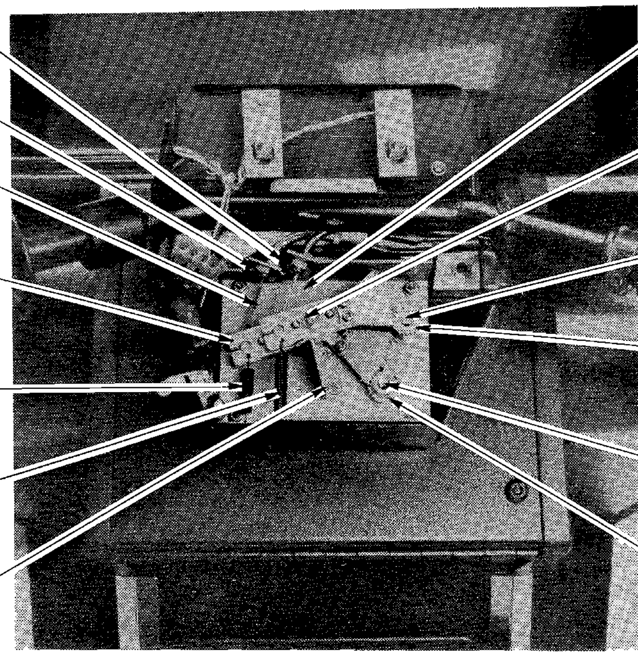


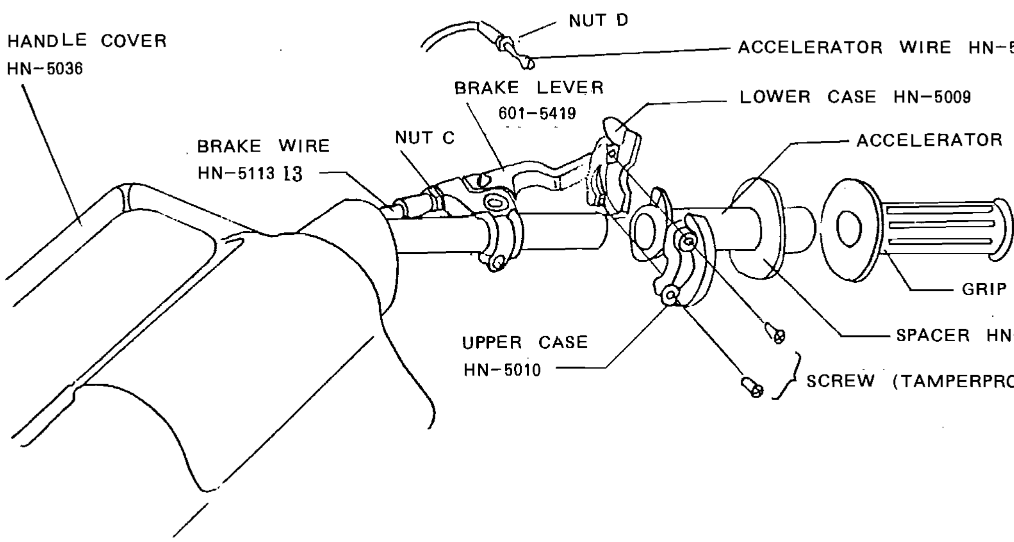


DISASSEMBLING PROCEDURE

1. To remove the BRACKET from the HANDLE UNIT, take off the 4 FLANGE NUTS which fasten the BRACKET.
2. To remove the PINION GEAR attached to the VOLUME SHAFT to be replaced, release the 2 SET SCREWS that fasten the PINION GEAR.
3. The VOLUME CONTROL can be removed from the BRACKET by taking off the VOLUME SHAFT'S NUT A.
4. After the replacement has been made, reassemble them in sequential order opposite from the above procedure.

16. REPLACING THE ACCELERATOR / BRAKE WIRES





REPLACING THE ACCELERATOR WIRE

① Remove the HANDLE COVER (for the removal method, page 20 .)

② Take off 2 TAMPERPROOF SCREWS A to disassemble the UPPER CASE and the LOWER CASE from the ACCELERATOR CASE.

③ In the above second illustration, the ACCELERATOR WIRE which is attached to the LOWER CASE can be removed by turning the LOWER CASE counterclockwise.

④ In the above first illustration, after removing the ACCELERATOR SPRING, release NUT A to take off the ACCELERATOR WIRE.

REPLACING THE BRAKE WIRE

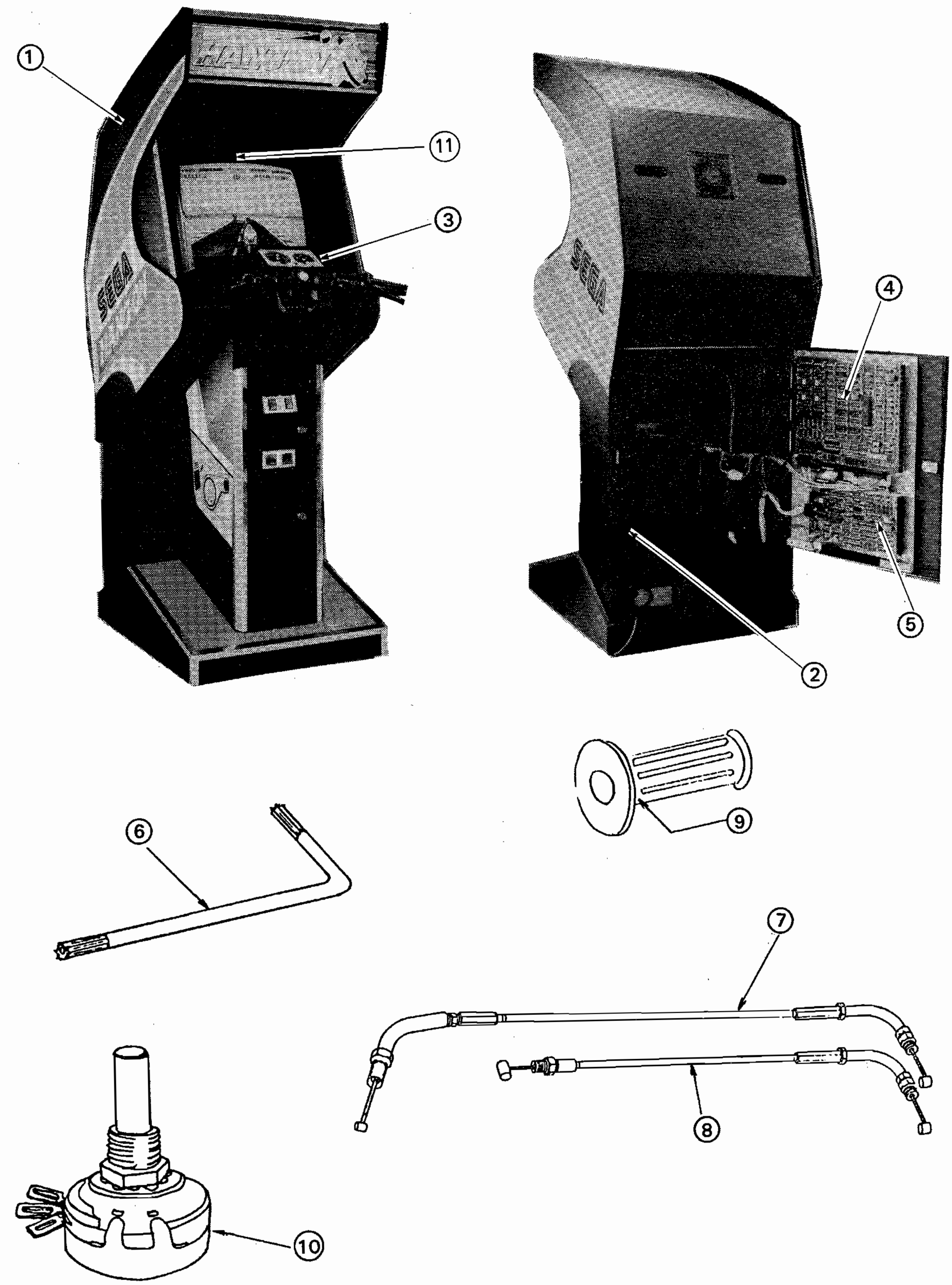
① Remove the HANDLE COVER (for the removal method, page 20 .)

② Release the BRAKE LEVER'S NUT C to remove the BRAKE WIRE.

③ Take off the BRAKE SPRING and NUT B to completely remove the BRAKE WIRE from the HANDLE UNIT.

17. PARTS LIST

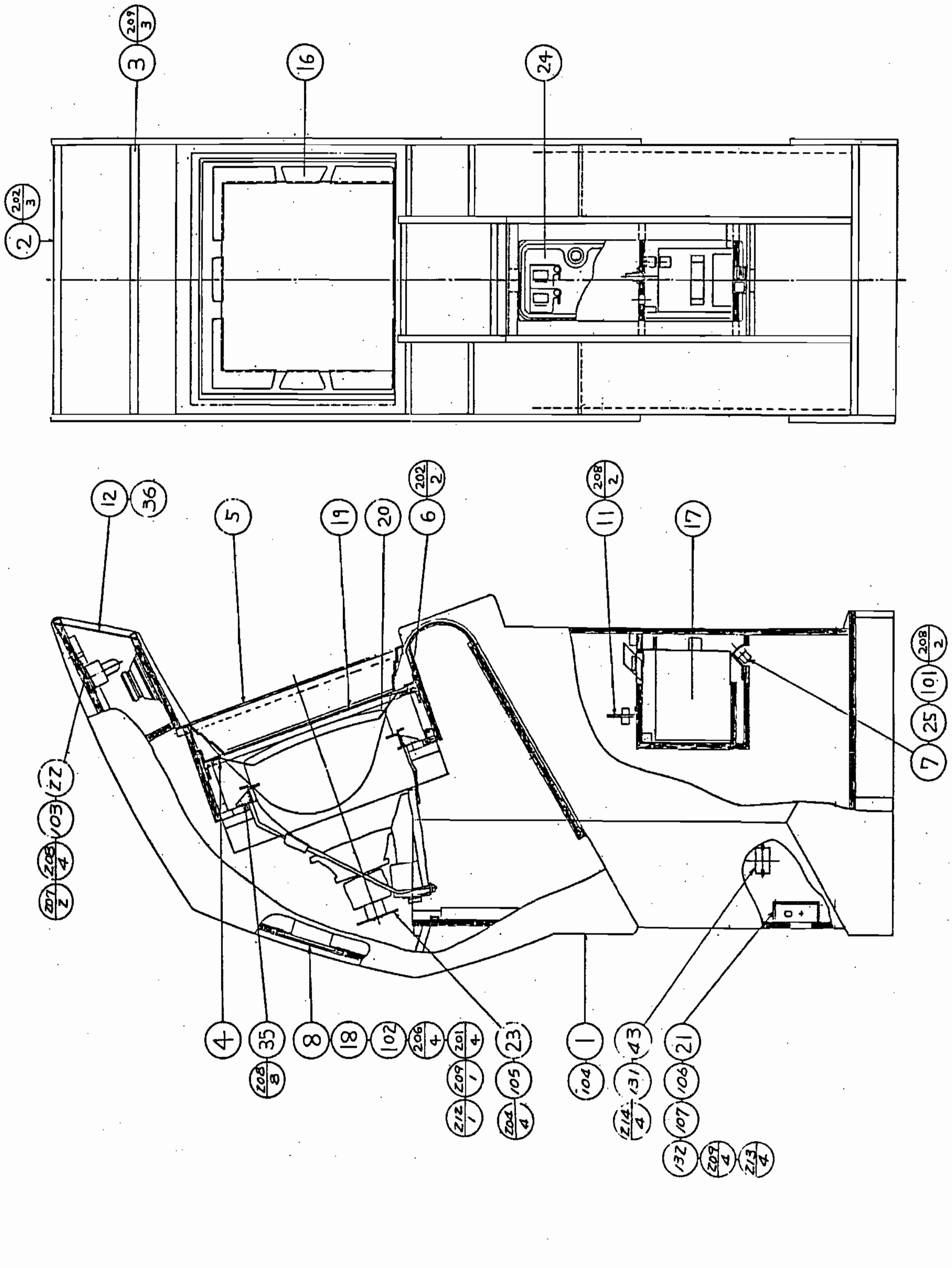
① TOP ASSY HANG-ON (HN-00001) (D-1/2)



① TOP ASSY HANG-ON (HN-00001) (D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	HN-10002	ASSY CABINET
2	HN-40002	ASSY POWER SUPPLY
3	HN-50001	ASSY HANDLE
4	834-5667-01	ASSY GAME BOARD A
5	834-5706-01	ASSY GAME BOARD A
6	540-0007	WRENCH FOR TAMPERPROOF SCREW M5
	540-0015	WRENCH FOR TAMPERPROOF SCREW M6
	540-0009	WRENCH FOR TAMPERPROOF SCREW M8
7	HN-5112	ACCELERATOR WIRE S
8	HN-5113	BRAKE WIRE S
9	107-0009	GRIP LEFT & ACCEL
10	220-0094	VOLUME CONTROL 5KΩ B TYPE
	220-5130	VOLUME CONTROL B-5KΩ
11	422-0057	PLAY INSTR SH
	420-5247	DISPLAY MANUAL 20"

② ASSY CABINET (HN−10002) (D−1/3)



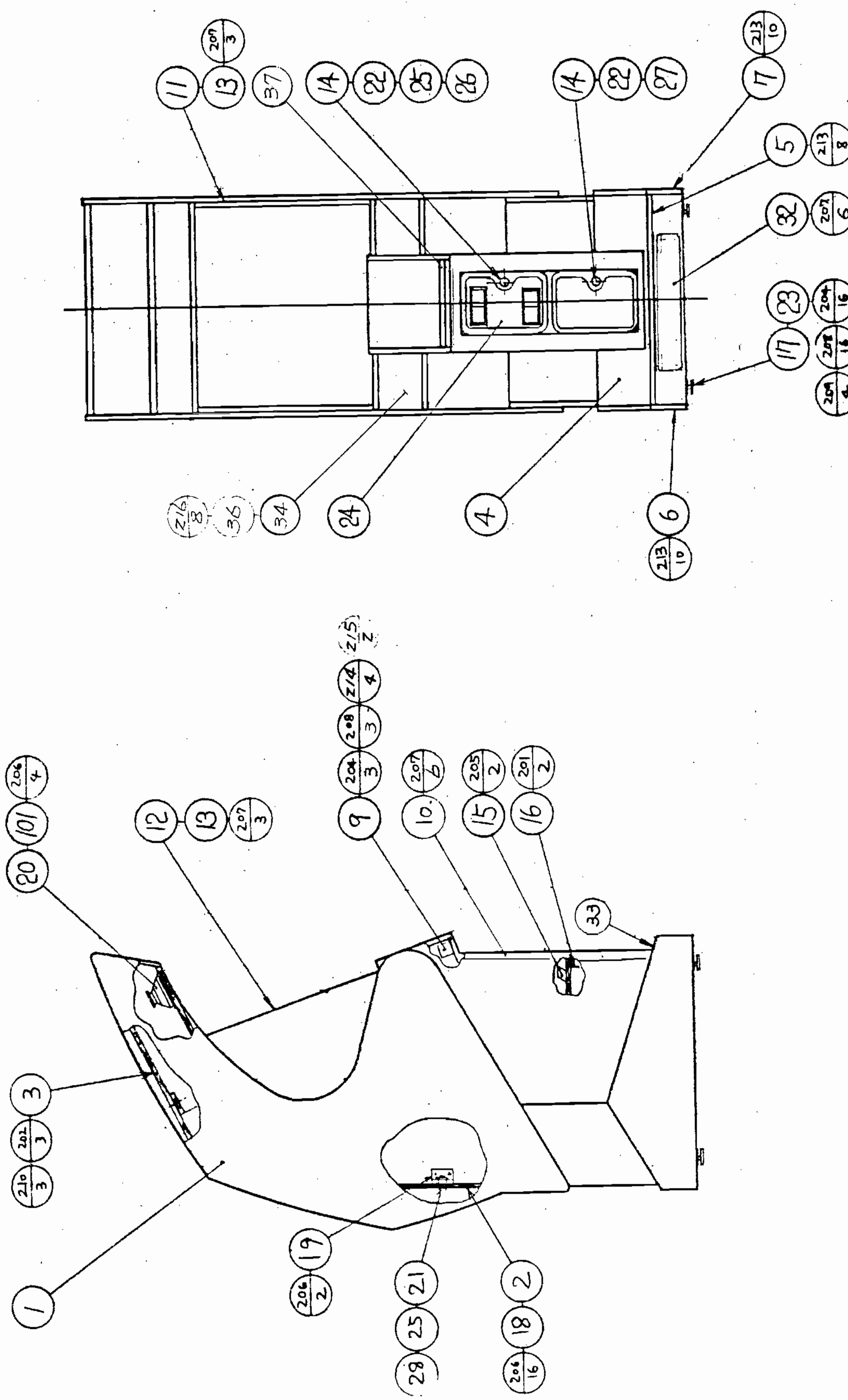
② ASSY CABINET (HN-10002) (D-2/3)

ITEM NO.	PART NO.	DESCRIPTION
1	HN-1057	ASSY SUB-CAB
2	HN-1036	ORNAMENT FRAME TOP
3	HN-1037	ORNAMENT FRAME LOWER
4	HN-1038	MASK BOARD
5	HN-1039	WINDOW GLASS
6	HN-1040	HOLDER BRKT
7	HN-1056	METER BRKT
8	HN-1042	FAN BRKT
11	HN-1045	SW UNIT
12	HN-1063	BILLBOARD PLATE
16	HN-1053	WINDOW MASK
17	HN-1055	CASH BOX
18	MO-1051X	GUARD PLATE
19	AB-1151Y	TV MASK GRAY SMOKE
20	AB-1206	TV MASK T8 20
21	MO-1215Y	COVER
22	VE-1036	FL BRKT
23	200-5044	ASSY CLR DSPL 20 TYPE
24	109-0045	KEY HOLDER
25	80931	STICKER COIN METOR
26	SGB-3637-2	WIRE HARN FAN MOTER
27	SGB-3637-3	WIRE HARN FL 15W
28	SGB-3637-4	WIRE HARN EXT AC 100V
29	SGB-3637-8	WIRE HARN AUDIO
30	SGB-3637-9	WIRE HARN RGB
31	SGB-3637-10	WIRE HARN EXT 50P
32	SGB-3637-12	WIRE HARN COIN MTR
33	SGB-3637-17	WIRE HARN EARTH
34	SGB-3637-18	WIRE HARN AC IN
35	TY-1019	BRKT TV
36	HN-1069	RUBBER CUSHION
37	SGB-3637-21	WIRE HARN EXT 12V
38	SGB-3637-20	WIRE HARN EXT FL
43	1050064	BRKT MAIN SW
101	220-5064	MAG CNTR 6 DIG DC 5V
102	260-0011	AXIAL FLOW FAN AC 100V 50-60 Hz
103	390-5108-01	ASSY FL LIGHT 15W 50Hz PALUCK
	390-5120-01	ASSY FL LIGHT 15W 60Hz PALUCK
104	280-0419	HARNESS LUG
105	600-5133	CABLE & CONN 300L
106	280-0418	BUSHING STRAIN RELIEF 8.3
107	280-0417	TERMINAL BINDING POST BLACK
108	209-0023	CONN CLOSED END
109	211-0167	TERMINAL LUG ROUND ID 5
110	211-0043	CONN PLUG AMP 2P WHITE
111	211-0118	CONN CAP AMP 3P RED
112	211-0085	CONN PLUG AMP 2P BROWN
113	211-0073	CONN PLUG AMP 4P WHITE
114	211-0087	CONN PLUG AMP 4P BROWN
115	211-0102	CONN PLUG AMP 4P YELLOW
116	211-0044	CONN CAP AMP 2P WHITE
117	211-0080	CONN CAP AMP 2P BROWN
118	211-0117	CONN CAP AMP 2P YELLOW
119	211-0060	CONN CAP AMP 3P WHITE
120	211-0081	CONN CAP AMP 3P BROWN

② ASSY CABINET (HN−10002) (D−3/3)

ITEM NO.	PART NO.	DESCRIPTION
121	211−0072	CONN CAP AMP 4P WHITE
122	211−0082	CONN CAP AMP 4P BROWN
123	211−0084	CONN CAP AMP 9P BROWN
124	211−0065	CONN CAP AMP 9P WHITE
125	211−5105	CONN FEM 50P
126	211−5034	CONN FEM 6P
127	211−0041	CONN PIN AMP
128	211−0042	CONN SOCKET AMP
129	211−0005	CONN CRIMP LOCK
130	211−5047	CONTACT (AMP 172656−2)
131	509−0039	SW PB TYPE
132	600−0110	CABLE & PLUG ASSY W/EARTH (USA)
	600−5007	CABLE & PLUG ASSY W/EARTH (EUROPE)
201	000−0310−FS	M SCR PH W/FS M3×10
202	000−0414 −S	M SCR PH W/S M4×14
203	000−0510−S	M SCR PH W/S M5×10
204	000−0516−FS	M SCR PH W/FS M5×16
206	008−0416	TMP PRF SCR TH M4×16
207	010−0406−F	S−TITE SCR PH W/F M4×6
208	005−3513	W SCR RH 3.5×13
209	051−0004	FLG NUT M4
212	000−0412	M SCR PH M4×12
213	031−0425−B	CRG BLT BLK M4×25
214	005−3113−F	W SCR RH W/F 3.1×13

③ ASSY SUBCABINET (HN−1057) (D−3/3)



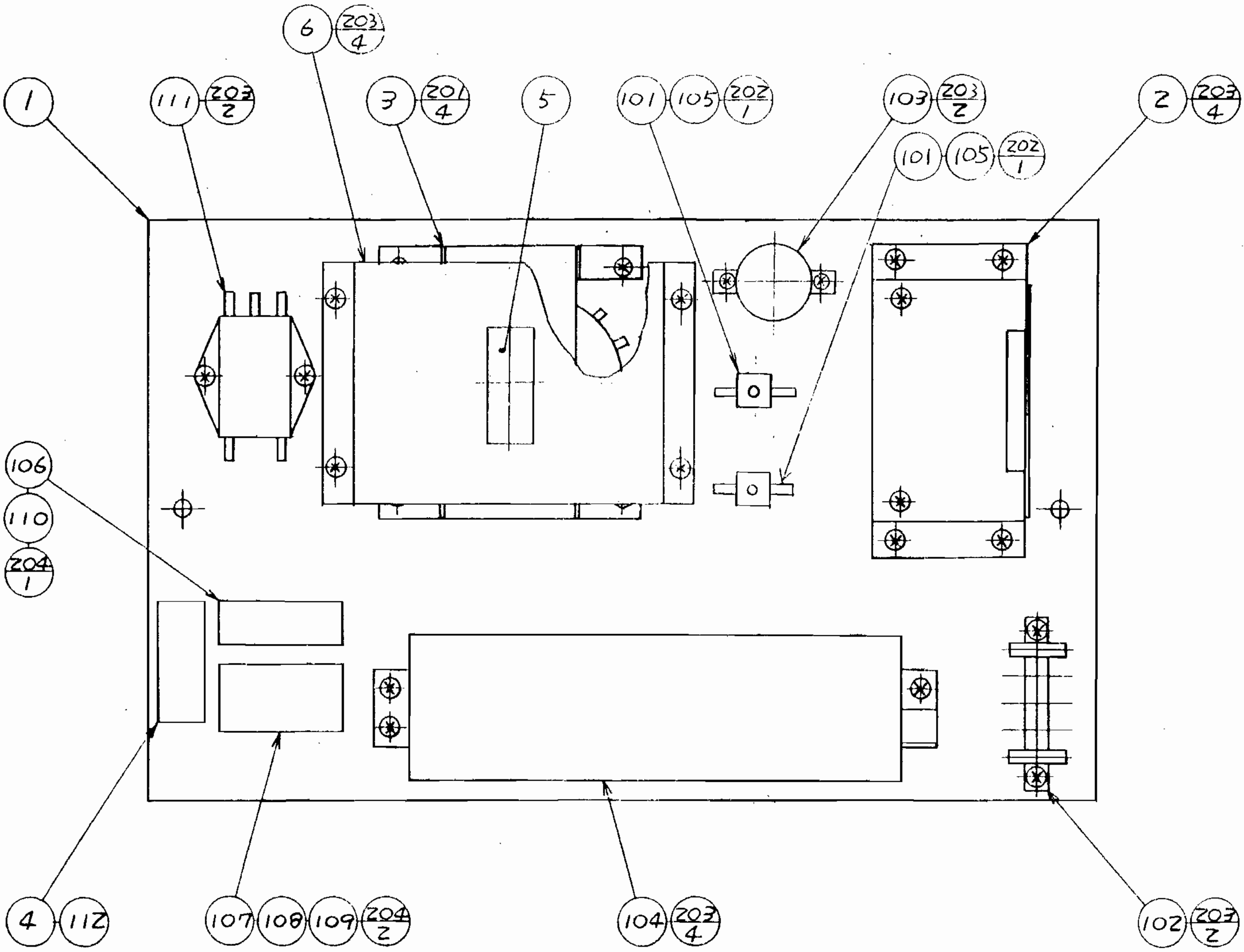
③ ASSY SUBCABINET (HN−1057) (D−2/3)

ITEM NO.	PART NO.	DESCRIPTION
1	HN−1058	WOODEN CABINET
2	HN−1024	BACK DOOR
3	HN−1025	LID BOARD
4	HN−1026	FLOOR MAT
5	HN−1027	CORNER PROTECTOR A
6	HN−1028	CORNER PROTECTOR B
7	HN−1029	CORNER PROTECTOR C
9	HN−1031	HANDLE UNIT BRACKET
10	HN−1061	CORNER SASH
11	HN−1033	ORNAMENT PROTECTOR A
12	HN−1034	ORNAMENT PROTECTOR B
13	HN−1035	SPACER
14	HN−1050	SPACER RING
15	HN−1051	LOWER COIN CHUTE
16	HN−1052	LOCK BRKT
17	TA−1079X	LEG ADJUSTER BRKT
18	TA−1010	HINGE 148
19	SH−2061X	STOPPER
20	AN−1107	GUARD PLATE
21	DP−1148X	LKG TNG
22	DP−1167	TNG LKG
23	601−0455	LEG ADJUSTER
24	222−5128−01	ASSY COIN CHUTE 25∅ TWIN
	222−5128−03	ASSY COIN CHUTE 25∅×2 TWIN
	222−5128−04	ASSY COIN CHUTE 1DM×2 5DM
25	220−5044−01	MAGNETIC LOCK W/O KEY
26	220−5045−01	KEY MASTER FOR 220−5044−01
27	220−5046	MAGNETIC LOCK W/KEYS
28	117−0062	PLATE LOCK RETAINER
29	SGB−3637−5	WIRE HARN SP RIGHT (MFG)
	SGB−3637−6	WIRE HARN SP LEFT (MFG)
31	SGB−3637−11	WIRE HARN COIN SW (MFG)
32	HN−1059	LID PLATE
33	HN−1060	FLOOR MAT FRONT
34	HN−1062	ORNAMENT PLATE A
36	HN−1067	HOLDER
37	HN−5035	HINGE 246
38	HN−1071	BAFFLE BOARD
39	HN−1070	SPACER BOARD
101	130−5001	SPEAKER 8OHM ∅120
102	211−0094	CONN PLUG AMP 2P RED
103	211−0095	CONN PLUG AMP 2P ORANGE
104	211−0073	CONN PLUG AMP 4P WHITE
105	211−0041	CONN PIN AMP
106	280−5015	FASTON RCPT 187
107	280−5016	FASTON RCPT 205
201	000−0416−5	M SCR PH W/S M4×16
202	000−0430	M SCR PH W/S M4×30
204	031−0525−B	CRG BLT−BLK
205	005−3113	W SCR RH 3.1×13

③ ASSY SUBCABINET (HN−1057) (D−1/3)

ITEM NO.	PART NO.	DESCRIPTION
206	005−3516−F	W SCR RH W/F 3.5×16
207	051−0004	FLG NUT M4
208	051−0005	FLG NUT
209	059−0007	HEX NUT 3/8−16
210	060−0004	FLT WSHR M4
213	046−0001	SCR NAIL TH H STNLS 1.5×16
214	005−3516	W SCR RH 3.5×16
215	000−0516−5	M SCR PH W/S M5×16
216	008−0416	TMP PRF SCR TH M4×16

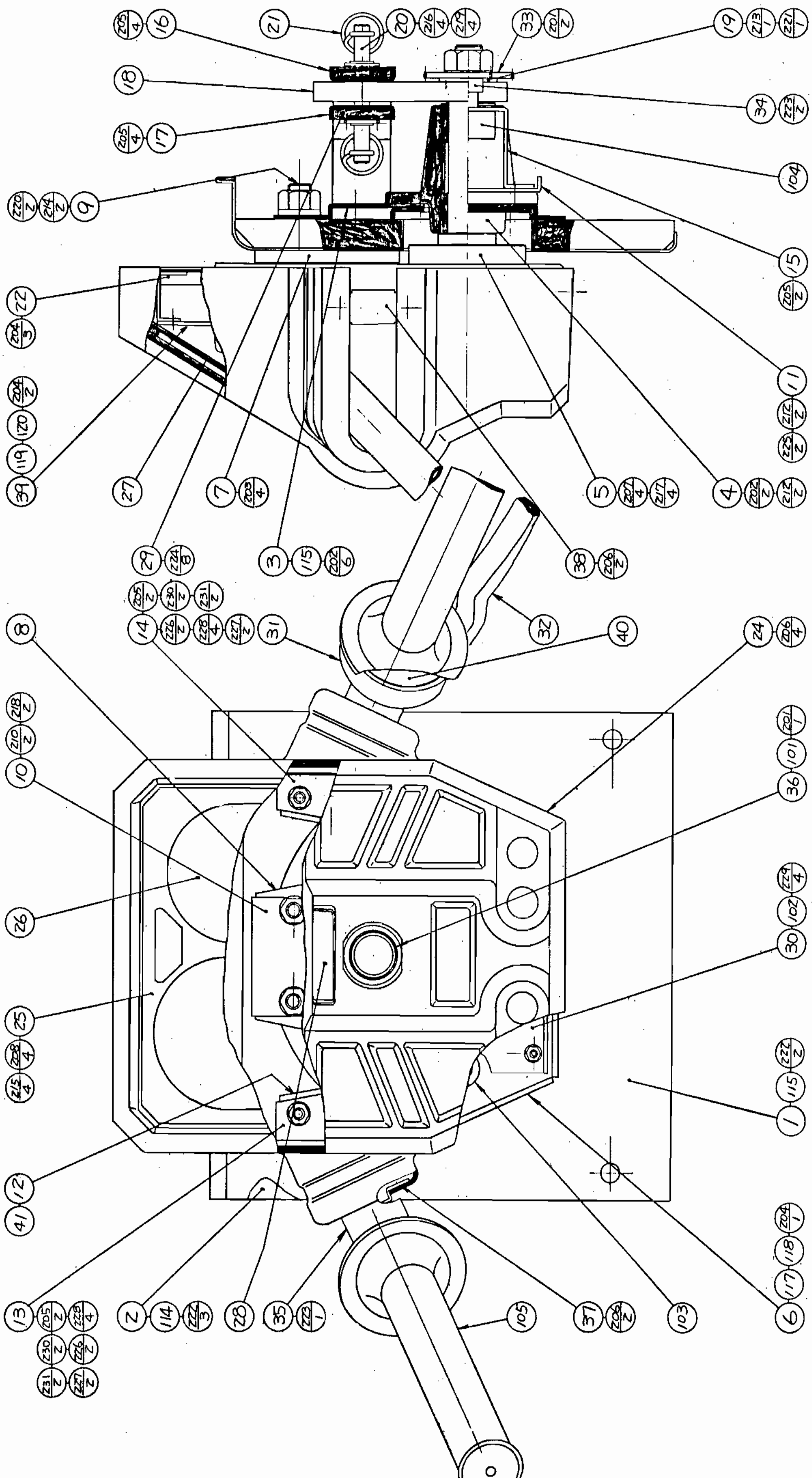
④ ASSY POWER SUPPLY EXPORT (HN−40002) (D−1/2)



④ ASSY POWER SUPPLY EXPORT (HN−40002) (D−2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	HN−4004	BASE
2	GR−4600	PWR AMP DC 39V 15W
3	560−5068	PWR XFMP 90V−240V 10V 24V 100V
4	421−6071	FUSE INSTR
5	421−6092	FUSE INSTR
	81319	STICKER 120V
	80666	STICKER 200V
	80556	STICKER 220V
	80595	STICKER 230V
	80309	STICKER 240V
6	HN−4003	COVER
7	SGB−3636−1	WIRE HARN PWR SPLY
	SGB−3637−1	WIRE HARN PWR SPLY
101	117−0068	TERMINAL PLATE IL3P
102	211−0174	TERMINAL PLATE 5P
103	150−0173	CAP E 4700MF 50V C−TYPE
104	400−5035	SW REG 90V−240V 5V 10A
105	481−0065	DIODE BRIDGE S2VB10
106	514−0045	FU HLDR W/COVER
107	514−0064	FU HLDR 2P W/COVER
108	514−0036	FU 3A 6.4×30MM
	514−0036	FU SA 6.4×30MM
109	514−0040	FU 4A 6.4×30MM
110	514−0034	FU 5A 6.4×30MM
111	601−0429	NOISE FLTR AC250V
112	601−0769	STAPLE MAX #3
113	280−0419	HARNESS LUG
114	211−0167	TERMINAL LUG ROUND ID5
115	211−0097	CONN PLUG AMP 3P RED
116	211−0080	CONN CAP AMP 2P BROWN
117	211−0115	CONN CAP AMP 2P RED
118	211−0116	CONN CAP AMP 2P ORANGE
119	211−0072	CONN CAP AMP 4P WHITE
120	211−0123	CONN CAP AMP 4P YELLOW
121	211−0157	CONN FEM 3P
122	211−0158	CONN FEM 6P
123	211−5101	CONN FEM 10P
124	211−0041	CONN PIN AMP
125	211−0042	CONN SOCKET AMP
126	211−0005	CONN CRIMP LOCK
127	211−5047	CONTACT (AMP 172656−2)
128	211−0044	CONN CAP AMP 2P WHITE
201	000−0414−FS	M SCR PH W/FS M4×14
202	005−3110	W SCR RH 3.1×10
203	005−3113−F	W SCR RH W/F 3.1×13
204	005−3120	W SCR RH 3.1×20

⑤ ASSY HANDLE (HN−50001) (D−1/3)



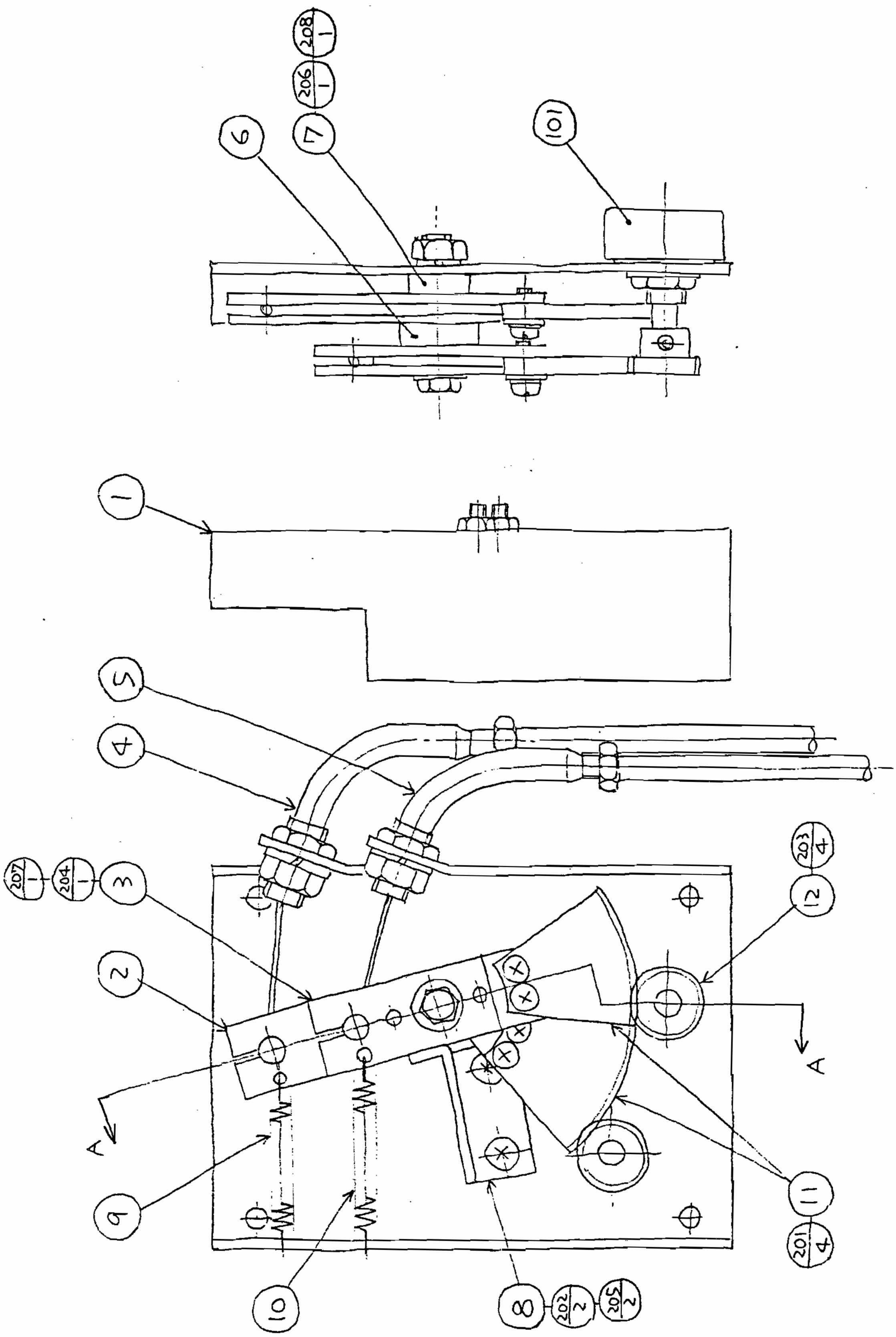
⑤ ASSY HANDLE (HN−50001) (D−2/3)

ITEM NO.	PART NO.	DESCRIPTION
1	HN−5013X	FRONT PANEL
2	HN−5014	BASE
3	HN−5015	HANDLE BRACKET
4	TB−2004X	HOUSING
5	HN−5017	HANDLE SHAFT
6	HN−5018X	HANDLE BASE
7	HN−5019	SLIDE PLATE A
8	HN−5020	SLIDE PLATE B
9	HN−5021	SLIDE SHAFT
10	HN−5022	SLIDE HOLDER
11	HN−5023	VR BRACKET BASE
12	HN−5024X	BUMPER
13	HN−5025X	BUMPER HOLDER A
14	HN−5026X	BUMPER HOLDER B
15	HN−5027	VR BRACKET
16	HN−5028	GUIDE BRACKET UPPER
17	HN−5029	GUIDE BRACKET LOWER
18	HN−5030	CAM
19	HN−5031	GEAR BRACKET
20	HN−5032X	SHAFT
21	HN−5033X	EXTENSION SPRING
22	HN−5034	REAR LID
24	HN−5036	MECHANISM COVER
25	HN−5037	PANEL
26	HN−5038	METER PLATE F
27	HN−5039	METER PLATE R
28	421−6103	STICKER START
29	HN−5040	GUIDE PLATE
30	HN−5111	ASSY CONTROL
	SGB−3636−13	WIRE HARN VR
	SGB−3636−15	WIRE HARN START
	SGB−3636−16	WIRE HARN EXT CONT
31	601−5418	ASSY ACCELERATOR CASE
32	601−5419	ASSY LEVER
33	601−5423	GEAR 1/6
34	601−5424	GEAR 30
	SGB−3636−21	WIRE HARN LAMP
35	HN−5041	SPACER
36	HN−5042	STOPPER RING
37	HN−5043X	COVER A
38	HN−5044X	COVER B
39	TB−2007	LAMP HOLDER BOARD
40	HN−5045	SPACER
41	HN−5046	SPACER TUBE
101	509−5050	PUSH BUTTON SWITCH 1T YELLOW W/LAMP
102	310−5009	INST SPIRAL TUBE ID ∅9
103	280−5066	RUBBER GROMMET
104	220−0094	VOL CONT 5KΩ B TYPE
	220−5130	VOL CONT B−5K OHM
105	107−0009	GRIP LEFT & ACCELERATOR

⑤ ASSY HANDLE (HN−50001) (D−3/3)

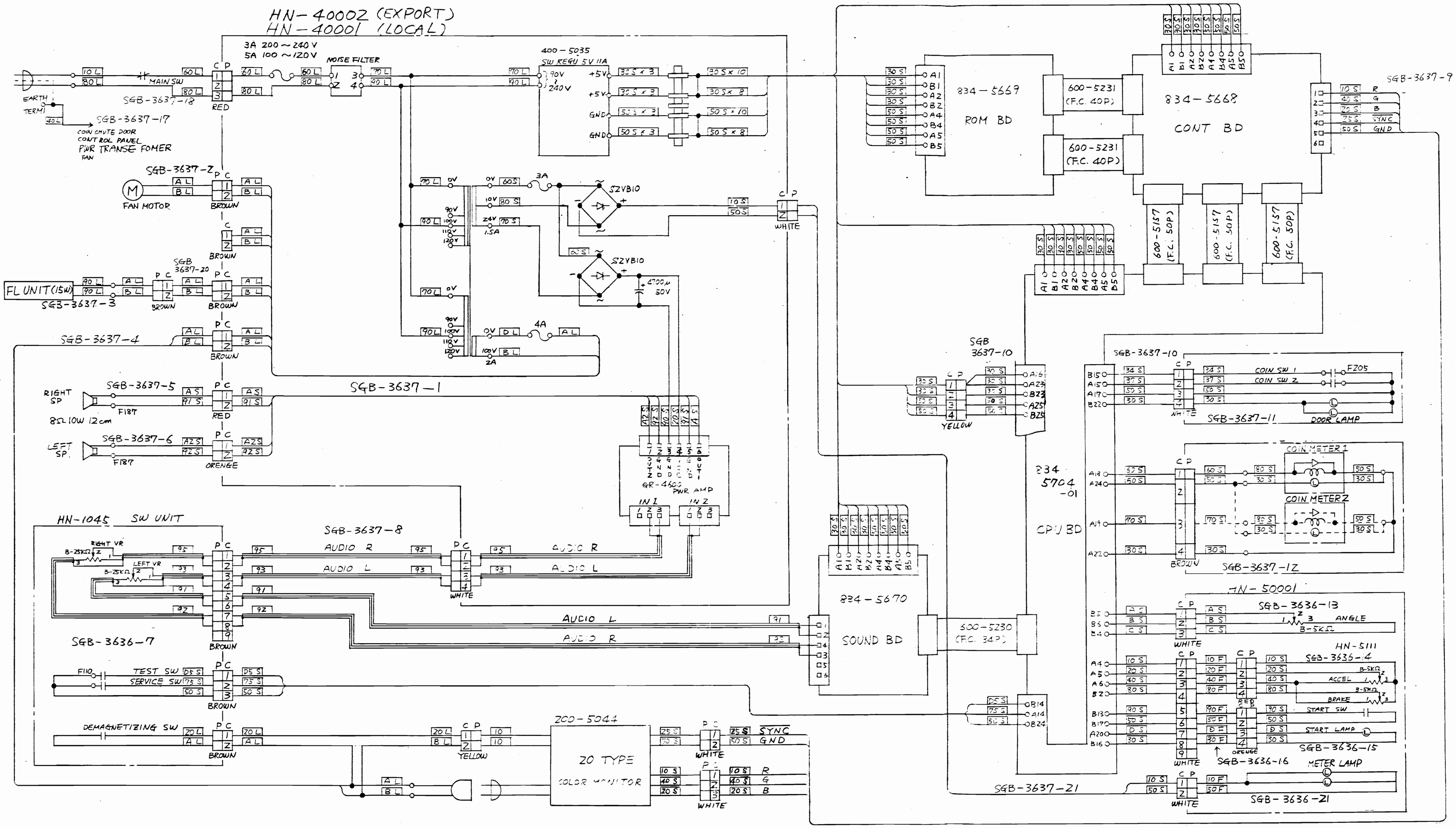
ITEM NO.	PART NO.	DESCRIPTION
106	211−0059	CONN PLUG AMP 3P WHITE
107	211−0101	CONN PLUG AMP 4P ORANGE
108	211−0064	CONN PLUG AMP 9P WHITE
109	211−0121	CONN CAP AMP 4P RED
110	211−0122	CONN CAP AMP 4P ORANGE
111	211−0041	CONN PIN AMP
112	211−0042	CONN SOCKET AMP
113	280−0472	FASTON RCPT 110
114	280−0419	HARNESS LUG
115	601−5003	FREE BUSH
116	211−0043	CONN PLUG AMP 2P WHITE
117	280−0132	CLAMP CORD PLASTIC ID 10mm
118	280−5008	CORD CLAMP ∅15
119	214−0081	WEDGE BASE SOCKET ASSY
120	390−0116	LAMP WEDGE BASE TYPE 14V 0.24A
201	000−0406−S	M SCR PH M4×6
202	000−0514	M SCR PH W/S M5×14
203	006−3520	W SCR FH 3.5×20
204	010−0308−F	S−TITE SCR PH W/F M3×8
205	010−0408−F	S−TITE SCR PH W/F M4×8
206	008−0510	TMP PRF SCR TH M5×10
207	030−0612	HEX BLT M6×12
208	050−0004	HEX NUT M4
210	050−0008	HEX NUT M8
212	051−0005	FLG NUT M5
213	059−0016	HEX NUT M14
214	059−0017	HEX NUT M12 P=1.75
215	060−0004	FLT WSHR M4
216	060−0008	FLT WSHR M8
217	061−0006	SPR WSHR M6
218	061−0008	SPR WSHR M8
219	065−0006	E RING 6mm
220	069−0016	SPR WSHR BLK M12
221	069−0019	SPR WSHR M14
222	005−3113−F	W SCR RH W/F 3.1×13
223	028−0014	SET SCR HEX SKT CP UNBR M4×4
224	001−0410	M SCR FH M4×10
225	000−0516−S	M SCR PH W/S M5×16
226	001−0512	M SCR FH M5×12
227	029−0043	M SCR FH M6×35
228	060−0006	FLT WASHER M6
229	000−0410−FS	M SCREW PH W/FS M4×10
230	054−0005	U NUT M5
231	054−0006	U NUT M6

⑥ ASSY CONTROL (HN−5111) (D−1/2)



⑥ ASSY CONTROL (HN−5111) (D−2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	HN−5101	BRACKET
2	HN−5102	LEVER LONG
3	HN−5103	LEVER SHORT
4	HN−5112	ACCELERATOR WIRE S
5	HN−5113	BRAKE WIRE S
6	HN−5106	SPACER
7	HN−5107	STUD
8	HN−5108	STOPPER
9	HN−5109	EXT SPRING ACCEL
10	HN−5110	EXT SPRING BRAKE
11	601−5251	GEAR 1/8
12	601−5415	GEAR 20
	SGB−3636−14	WIRE HARN CONT
101	220−0094	VOL CONT 5KΩ B TYPE
	220−5130	VOL CONT B−5K OHM
102	211−0100	CONN PLUG 4P RED
103	211−0041	CONN PIN AMP
201	000−0408−FS	M SCR PH W/FS M4×8
202	001−0410	M SCR FH M4×10
203	028−0014	SET SCR HEX SKT CP UNBR M4×4
204	030−0508	HEX BLT M5×8
205	050−0004	HEX NUT M4
206	050−0006	HEX NUT M6
207	060−0005	FLT WSHR M5
208	061−0006	SPR WSHR M6



18. SCHEMATIC DIAGRAM

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